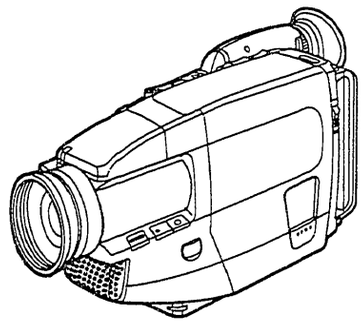
# HITACHI

# SERVICE MANUAL

| TK | No.6307E |
|---|---|

# VM-E53A(U,C),(PX)
# VM-E55A(U,C)



MANUAL RELATED TO THE VM-E53A/VM-E55A

| TITLE | MODEL | MANUAL No. |
|---|---|---|
| Service Manual [Supplement] | VM-E53A<br>VM-E55A | No. 6307E-1 |
| Service Manual | VM-AC82A(R) | No. 6322E |

Note:
Refer to the VM-E53A/VM-E55A Service Manual [Supplement] (No. 6307E-1) for the following items.

- Electrical Adjustment for CHAPTER 4.
- Block Diagrams for CHAPTER 8
- Pins Function of Microprocessors for CHAPTER 8.

8

## SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine Hitachi replacement parts. Especially critical parts in the power circuit block should not be replaced with other makers'. Critical parts are marked with ⚠ in the schematic diagram.
2. Before returning a repaired unit to the customer, the service technician must thoroughly test the unit to ascertain that it is completely safe to operate without any danger of electrical shock.

## X-RAY RADIATION

The primary source of X-ray radiation in this viewfinder is the picture tube. The tube used in this viewfinder is specially constructed to limit X-ray radiation emission. For continued X-ray radiation protection, the replacement tube must be the same type as the original, Hitachi approved one.

SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

## 8mm VIDEO CAMERA / RECORDER

May 1993 TOKAI Consumer Electronics Division

# Specifications

## General Specifications

| | |
|---|---|
| Power requirements | 6V DC |
| Power consumption | VM-E53A: 5.0W (when recording) |
| | VM-E55A: 5.3W (when recording) |
| Dimensions | 3-9/16" W x 4-9/16" H x 8-1/16" D (91mm x 116mm x 205mm) |
| Weight | VM-E53A: 1.6lbs(710g) without battery pack, lens hood, lens cap and cassette |
| | VM-E55A: 1.6lbs(720g) without battery pack, lens hood, lens cap and cassette |
| Operating temperature | 32°F ~ 104°F |
| Storage temperature | -4°F ~ 140°F |

## Video Recorder Specifications

| | |
|---|---|
| Format | 8mm |
| Record/playback | Two video record/playback heads |
| Video signal | EIA standard NTSC color |
| Tape speed | 14.3mm/sec |
| Video input | 1.0Vp-p, 75 ohm |
| Video output | 1.0Vp-p, 75 ohm |
| Audio input | -7.8dBs (316mVrms) |
| Audio output | -7.8dBs (316mVrms) |
| Fast forward/rewind time | Less than 8 minutes with P6-120 cassette |

## Camera Specifications

| | |
|---|---|
| Scanning | 525 lines/60 fields/30 frames |
| Required minimum illumination | 1lux |
| Pickup device | 1/3" C.C.D. |
| Lens diameter | 34mm |

**ATTENTION:**
The product that you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

Ni-Cd

CONTENTS


CHAPTER 1

COMPARISON WITH PREVIOUS MODEL ..... 1-1
SERVICE MANUAL ABBREVIATION LIST ..... 1-2
WHEN USING THIS SERVICE REFERENCE MATERIAL ... 1-4
JIGS AND TAPES FOR ADJUSTMENT ..... 1-8
HOW TO USE THE EXTENSION CABLE ..... 1-9

CHAPTER 2

DISASSEMBLY

1. IDENTIFICATIONS OF MAJOR COMPONENTS ..... 2-1
 1.1 Major Components and Circuit Boards .... 2-1
 1.2 Major Tape Transport Mechanism Components ..... 2-4
2. HOW TO SET TO THE EJECT STATE MANUALLY .... 2-5
3. NORMAL DISASSEMBLY METHOD ..... 2-6
 3.1 Cases and Circuit Boards ..... 2-6
 3.2 Electronic Viewfinder (EVF) Block ..... 2-14
 3.3 Lens Block ..... 2-15
4. TAPE TRANSPORT MECHANISM DISASSEMBLY ..... 2-16
 4.1 Cassette Holder, Motors, Sensors and Circuit Boards ..... 2-16
 4.2 Others Parts ..... 2-20

CHAPTER 3

MECHANISM ADJUSTMENT

1. MAJOR MECHANICAL COMPONENTS ..... 3-1
2. BEFORE STARTING ADJUSTMENT ..... 3-1
3. PHASE MATCHING IN ASSEMBLY ..... 3-1
 3.1 Mechanism State Switch ..... 3-2
 3.2 Loading Gears and Loading Ring ..... 3-2
4. TAPE TRANSPORT SYSTEM CHECK/ADJUSTMENT .... 3-3
 4.1 Tension Pole Position/ Tension Torque Adjustments ..... 3-3
 4.2 Pull-out Pole and Impedance Roller Height Check/Adjustment ..... 3-4
 4.3 Supply/Take-up Guide Roller Height Adjustment ..... 3-4
5. ADJUSTMENT AFTER REPLACING THE CYLINDER ... 3-5
6. CHECKING THE TORQUE ..... 3-6
7. MODIFICATION TO ATF-R JIG ..... 3-6

MECHANICAL BLOCK MAINTENANCE/INSPECTION PROCEDURE ..... 3-7

CHAPTER 5

SCHEMATIC & CIRCUIT BOARD DIAGRAMS

INTERNAL WIRING DIAGRAM ..... 5-1

| | SCHEMATIC DIAGRAM | CIRCUIT BOARD DIAGRAM |
|---|---|---|
| SENSOR | 5-3 | 5-39 |
| SENSOR DRIVE | 5-5 | 5-33 |
| PROCESS | 5-7 | 5-33 |
| DIGITAL PROCESS | 5-9 | 5-33 |
| H.GYRO (HTS9558C) | 5-11 | 5-39 |
| V.GYRO (HTS9557C) | 5-11 | 5-39 |
| WIRING/SWITCH UNIT | 5-11 | - |
| SERVO | 5-13 | 5-33 |
| SYSTEM CONTROL | 5-15 | 5-33 |
| TROUBLE SENSOR | 5-17 | 5-33 |
| JACK | 5-17 | 5-33 |
| AUDIO | 5-19 | 5-33 |
| DC-DC CONVERTER | 5-21 | 5-33 |
| PRE AMP | 5-23 | 5-33 |
| LUMINANCE/CHROMA | 5-27 | 5-33 |
| AUTO FOCUS | 5-29 | 5-33 |
| TROUBLE SENSOR (HTS9551A) | 5-16 | 5-40 |
| REC SW/BATT. | 5-18 | 5-33 |
| ELECTRONIC VIEWFINDER (EVF) | 5-31 | 5-32 |

WAVEFORMS
 SENSOR/PROCESS ..... 5-4
 SERVO ..... 5-12
 SYSTEM CONTROL ..... 5-17
 PRE AMP ..... 5-25
 LUMINANCE/CHROMA ..... 5-26
 ELECTRONIC VIEWFINDER (EVF) ..... 5-31

CHAPTER 6

EXPLODED VIEWS

CABINET SECTION 1 (LEFT CASE SIDE AND VCR BLOCK) ..... 6-1
CABINET SECTION 2 (RIGHT CASE SIDE) ..... 6-2
CAMERA BLOCK SECTION ..... 6-3
CHASSIS SECTION ..... 6-4
ELECTRONIC VIEWFINDER (EVF) SECTION ..... 6-5
LENS BLOCK SECTION ..... 6-5
ACCESSORIES ..... 6-6

CHAPTER 7

REPLACEMENT PARTS LIST ..... 7-1

CHAPTER 8

APPENDIX

IDENTIFICATION AND OPERATION OF CONTROLS ..... 8-1

CHAPTER 1

# COMPARISON WITH PREVIOUS MODEL

← : Same as VM-E35A

| ITEM | VM-E35A | VM-E53A/VM-E55A |
|---|---|---|
| **GENERAL** | | |
| POWER REQUIREMENTS | 6V DC | ← |
| POWER CONSUMPTION | 5.8 W | VM-E53A : 5.0 W/VM-E55A : 5.3 W |
| DIMENSIONS (W X H X D mm) | 80.5 x 104 x 238 | 91 x 116 x205 |
| WEIGHT | 560 g | VM-E53A : 710 g/VM-E55A : 720 g |
| OPERATION TEMPERATURE | 32° F ~ 104° F | ← |
| STORAGE TEMPERATURE | -4° F ~ 140° F | ← |
| **VIDEO RECORDER SECTION** | | |
| FORMAT | 8mm | ← |
| RECORD/PLAYBACK SYSTEM | Four video record/ playback heads | Two video record/playback heads |
| VIDEO SIGNAL | EIA standard NTSC color | ← |
| TAPE SPEED | 14.3 mm/sec. | ← |
| VIDEO INPUT | 1.0Vp-p, 75 ohm | ← |
| VIDEO OUTPUT | 1.0Vp-p, 75 ohm | ← |
| AUDIO INPUT | -7.8dBs (316m Vrms) | ← |
| AUDIO OUTPUT | -7.8dBs (316m Vrms) | ← |
| FAST FORWARD/REWIND TIME | Less than 8 minutes with P6-120 cassette | ← |
| HEAD WHEEL | 26.7 mm | 40 mm |
| BASIC CHASSIS TYPE | SH | TH |
| **CAMERA SECTION** | | |
| SCANNING | 525 lines/60 fields/ 30 frame | ← |
| REQUIRED MINIMUM ILLUMINATION | 1 lux | ← |
| CAMERA DEVICE | 1/3" C.C.D | ← |
| LENS DIAMETER | 34 mm | ← |
| ZOOM RATIO/APERTURE | 8:1 (6mm - 48mm) F1.4 | ← |
| **FEATURES** | | |
| WHITE BALANCE | AI Auto white balance | ← |
| DIGITAL SIGNAL PROCESSOR | Yes | ← |
| ELECTRICAL ZOOM | x64 | x24 (16 x INST. ZOOM 1.5) |
| INSTANT (INST.) ZOOM | No | Yes (x1.5) |
| ELECTRONIC IMAGE STABILIZER | No | Only for VM-E55A |
| AUTOFOCUS SYSTEM | VIDEO AF | ← |
| PROGRAM AE (SHUTTER SPEED) | Yes (Program AE only) | ← |
| TITLER | Yes (2 page) | ← (Only on the remote control) |
| FADE | Yes | Only for VM-E55A |
| MANUAL/AUTO FOCUS | Selective | VM-E53A : Auto mode only/VM-E55A : Selective |
| CAMERA LIGHT SHOE (DC LIGHT) | Yes | ← |
| WIND (MIC) SWITCH | Yes | No |
| EXT. MICROPHONE JACK | No | ← |
| PHONES (HEAD PHONE) JACK | No | ← |
| **ACCESSORIES** | | |
| WIRELESS REMOTE CONTROL | Yes (Parts No. 5615341) | Yes (Parts No. 5616581) |
| BATTERY PACK | Yes [VM-BP82] | ← |
| AC ADAPTER/CHARGER | Yes [VM-AC82A] | Yes [VM-AC82A(R)] |
| EXTERNAL POWER ADAPTER | Yes (Parts No. 5861821) | Yes (Parts No. 5861832) |
| AV OUTPUT CABLE | Yes [Stereo Type] (Parts No. 5861721) | Yes [Monoural Type] (Parts No. 5860783) |



SERVICE MANUAL ABBREVIATION LIST

| A | |
|---|---|
| ACC | Automatic Color Control |
| ACK | Automatic Color Killer |
| ADC B-Y | Analog to Digital Converted B-Y Signal |
| ADC R-Y | Analog to Digital Converted R-Y Signal |
| ADC Y | Analog to Digital Converted Luminance |
| ADD | Adder |
| ADRS | Address |
| A.DUB | Audio Dubbing |
| AF | Autofocus |
| AFC | Automatic Frequency Control |
| AGC | Automatic Gain Control |
| AGC KILLER | AGC Killer Voltage |
| ALC | Automatic Level Control |
| AIC | Automatic Iris Control |
| AM | Amplitude Modulation |
| AMP | Amplifier |
| APC | Automatic Phase Control |
| ASBL | Assemble (Phase Matching) |
| AUD. | Audio |
| AUX | Auxiliary |
| A5V | Always 5V B+ Source |
| **B** | |
| B (BLU) | Color Signal BLUE |
| BATT. | Battery |
| BF | Burst Flag |
| BG | Burst Gate or Back Ground |
| BGP | Burst Gate Pulse |
| BH | Power Supply for Selecting VHF High Band |
| BL | Power Supply for Selecting VHF Low Band |
| BLK | Blanking |
| BM | Power Supply for Selecting VHF Mid Band |
| BPF | Bandpass Filter |
| BS | Power Supply for Selecting VHF Super Band |
| BU | Power Supply for Selecting UHF Band |
| BU | Back-up |
| BUF. | Buffer Amplifier |
| B-YL | Battery |
| **C** | |
| C | Chroma |
| C (CHROMA) | Chrominance Signal |
| CAPST. | Capstan |
| CAS | Column Address Strobe |
| CARRI. | Carrier |
| CATV | Cable TV |
| C.BLANK | Chroma Blanking |
| C.BLK | Composite Blanking |
| CCD | Charge Coupled Device |
| CG | Character Generator |
| C.FG/CFG | Capstan Frequency Generater |
| C.FREE RUN | Chapstan Free Run |
| CH | Channel |
| CHD | Camera Horizontal Drive Pulse |
| CHAR. | Character |
| CHROMA | Chrominance |
| C.MEMORY | Counter Memory |
| CNR | Chroma Noise Reducer |
| COM. | Common |
| COM. | Composite |
| COMPA | Comparator |
| COMPE | Compensator |
| COMPO | Composite |
| COMP-EXP | Compressor-Expander |
| CONV. | Converter |
| CONT | Control |
| CORR. | Correlation |
| COUNT. | Counter |
| CP | Clamp Pulse |
| C.PAUSE | Camera Pause |
| C/R | Capacitor/Resistor |
| C.RESET | Counter Reset |
| C.REVERSE | Count Reverse |
| CST | Cassette |

| C | |
|---|---|
| C.SYNC | Composite Synchronizing Signal |
| CTL | Control Track Pulse (Control) |
| CYL | Cylinder |
| CY (CYAN) | Color Signal CYAN |
| **D** | |
| DA | Double Azimuth |
| D/A | Digital to Analog Converter |
| D-D | Direct Drive |
| DEEMPHA. | Deemphasis |
| DEF | Deflection |
| DEMOD. | Demodulator |
| DEMPX | Demultiplexer |
| DET | Detector |
| DIFF. AMP | Differential Amplifier |
| DISCRI. | Discriminator |
| DISP. | Display |
| DL | Delay Line |
| DN | Down |
| DO | Dropout |
| DOC | Dropout Compensator |
| DRAM | Dynamic Random Access Memory |
| D.REF 25/30 | Delayed Reference 25/30Hz |
| D.SW 25/30 | Delayed Switching 25/30Hz |
| DSP | Digital Signal Processor |
| DT/OE | Data Transfer/Output Enable |
| D/W | Dark/White |
| DWC | Delayed Write Clock |
| **E** | |
| EA-ROM | Electrically Alterable Read Only Memory |
| E-E | Electronic-to-Electronic |
| EMPHA. | Emphasis |
| EQ | Equalizer |
| EVF | Electronic Viewfinder |
| EXT. | External |
| **F** | |
| F.ADV | Frame Advance |
| F/V | Frequency-to-Voltage Converter |
| FB | Feed Back |
| FF | Flip Flop |
| F.FWD | Fast Forward |
| FG | Frequency Generator |
| FM | Frequency Modulation |
| FREQ. | Frequency |
| FRAME ADV | Frame Advance |
| Fsc | Color Sub Carrier Frequency |
| FWD | Forward |
| **G** | |
| GEN | Generator |
| GND | Ground |
| **H** | |
| H | Horizontal |
| HBF | Horizontal Burst Flag |
| HD | Horizontal Drive |
| Hi-Fi | High Fidelity |
| HLT | Halt |
| HPF | High-pass Filter |
| HPL | High-pass Limiter |
| HSS | Horizontal Sync. Separator |
| **I** | |
| IF | Intermediate Frequency |
| INC | Row Counter Increment |
| INDI. | Indicator |
| INT. | Internal |
| INV. | Inverter |
| I/O | In/Out (Input/Output) |
| IR | Infrared Rays |
| IRIS DET | Iris Detection |
| IRT | Instant Recording Timer |
| **L** | |
| LCD | Liquid Crystal Display |
| LIN. | Linear |
| LM | Loading Motor |

| L | |
|---|---|
| LNC | Line Noise Canceller |
| LOG | Logarithm |
| LP | Long Play |
| LP (H) | Long Play Signal (Active High) |
| LPF | Low-pass Filter |
| LUMA | Luminance |
| L/R | Left/Right |
| **M** | |
| MAN | Manual |
| M.BRAKE | Main Brake |
| M.CUT | Monitor Cut |
| MEM. | Memory |
| MEM ON | Memory ON |
| MEM SW | Memory Switch |
| MEM VIDEO | Memorized Video |
| MIX | Mixer |
| MMV | Monostable Multivibrator |
| MOD. | Modulator |
| MPX | Multiplex |
| MPX VIDEO | Multiplexed Video |
| M.STATE | Mechanism State |
| M.STOP | Memory Stop |
| MTS | Multi Channel Television Sound |
| **N** | |
| NEG | Negative |
| NFB | Negative Feed Back |
| NORM. or NOR. | Normal |
| NR | Noise Reduction |
| **O** | |
| OB | Optical Black |
| O/E | Odd/Even Field |
| OSC | Oscillator |
| OSD | On-Screen Display |
| **P** | |
| PB/PLAY | Playback |
| P.CONT | Power Control |
| PIF | Picture Intermediate Frequency |
| PG | Pulse Generator |
| P IN P | Picture in Picture |
| PIX MOVE | Picture Move |
| PLL | Phase Locked Loop |
| POS. | Positive |
| POWER CONT. | Power Control |
| PROG. | Program |
| PROTECT. | Protector |
| PWM | Pulse Width Modulation |
| **R** | |
| R (RED) | Color Signal RED |
| RAM | Random Access Memory |
| RAS | Row Address Strobe |
| RC | Reading Clock |
| RCC | Reading Clock Clear |
| RCR | Row Counter Reset |
| REC | Record |
| RECT. | Rectifier |
| REF | Reference |
| REF 25/30 | Reference 25/30Hz from servo circuit |
| REG | Regulator |
| REL | Refresh Control |
| REW | Rewind |
| REV | Reverse |
| RF | Radio Frequency |
| RM | Reel Motor |
| ROM | Read Only Memory |
| R-YL | Color Difference Signal R-YL |
| **S** | |
| SAP | Second Audio Program |
| SAW | Sawtooth |
| SC | Serial Control |
| SC1 (0°) | 3.58MHz Subcarrier Signal 1 (0-degree Phase Shifted) |

| S | |
|---|---|
| SC2 (90°) | 3.58MHz Subcarrier Signal 2 (90-degree Phase Shifted) |
| SEP. | Separator |
| SG | Signal Generator |
| S/H | Sample and Hold |
| SIF | Sound Intermediate Frequency |
| SOL | Solenoid |
| SP | Standard Play |
| SP/LP | Standard Play/Long Play |
| S.REEL | Supply Reel Sensor |
| SRCH | Search |
| SRV | Servo |
| STABI. | Stabilizer |
| S.TRACK | Slow Tracking |
| STBY | Standby Mode |
| S-VHS | Super VHS |
| SW 15Hz | 15Hz Head Switching Pulse |
| SW 25/30Hz | 25/30Hz Head Switching Pulse |
| SYNC | Synchronizing signal |
| SYS.CON | System Control |
| **T** | |
| T (TELE) | Telephoto Angle |
| T.BRAKE | Take-up Brake |
| T/L | Tuner/Line |
| TP | Test Point |
| T.REEL | Take-up Reel Sensor |
| T.RESET | Timer Reset |
| TRS | Transfer |
| TμP | Timer Microprocessor |
| TU-μP | Tuning Microprocessor |
| **U** | |
| U/D | Up/Down |
| UNI. | Unified |
| **V** | |
| V (VERT) | Vertical |
| VAR | Variable |
| V.AGC | AGC Voltage |
| VCA | Voltage Controlled Amplitier |
| VCO | Voltage Controlled Oscillator |
| V.DRV | Vertical Drive Pulse |
| V.DUB | Video Dubbing |
| V/F | Voltage to Frequency Converter |
| VHS | Video Home System |
| VF | Focus Voltage |
| VOL. | Volume |
| V-REF | Voltage Reference |
| VP | Vertical Pulse |
| VSS | Vertical Sync. Separator |
| Vss | Voltage Super Source |
| VT | Tuning Voltage |
| VT-U | Tuning Voltage-UHF |
| VT-V | Tuning Voltage-VHF |
| VCXO | Voltage Controlled Crystal Oscillator |
| **W** | |
| WC | Write Clock |
| WCC | Write Clock Clear |
| WE | Weighting |
| WHT | Color Signal WHITE |
| WIDE | Wide Angle |
| WHD | Wide Horizontal Drive |
| WHT BAL CONT. | White Balance Control |
| **Y** | |
| Y | Luminance Signal |
| Y/C | Luminance/Chrominance |
| YE (YEL) | Color Singal YELLOW |
| YL | Luminance Signal (Low Component) |
| **ANOTHER** | |
| μP | Microprocessor |
| 5V | ON 5V B+ Source |
| 9V | ON 9V B+ Source |

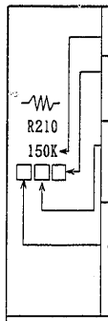


## WHEN USING THIS SERVICE REFERENCE MATERIAL

### 1. How to Read Abbreviations

Values, dielectric resistances (power capacitances), tolerances, grades of resistors (excluding variable resistors, etc.) and capacitors are indicated in the schematic diagrams using abbreviations. Collate these abbreviations and the following tables to read abbreviations and replace parts correctly.

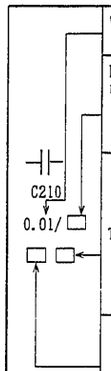
〔RESISTORS〕




| | |
|---|---|
| Value | No indication ····· ohm<br>K ····· kohm |
| Tolerance | No indication ····· ± 5%<br>K ····· ±10%<br>M ····· ±20% |
| Power capacitance | No indication ····· 1/8W<br>(All capacitances other than 1/8W are indicated in schematic diagrams with W omitted.) |
| Type | No indication ·· Carbon film fixed<br>RC ····· Carbon solid<br>RW ····· Power-type wire wound solid<br>RS ····· Metal oxide film solid<br>RN ····· Metal film solid |

Example
R210
150K ····· 150 kohm, carbon solid
RC.1/2.K 1/2W, ±10%

〔CAPACITORS〕




| | |
|---|---|
| Value | No indication ····· μF<br>P ····· PF |
| Dielectric resistance | No indication ····· 50WV<br>(All resistances other than 50WV and those of electrolytic capacitors are indicated with WV omitted.) |
| Tolerances | No indication ····· ±10%<br>J ····· ± 5%<br>M ····· ±20%<br>C ····· ±0.25PF<br>Z ····· +80%-20%<br>(No indication for electrolytic capacitors. (excluding tantalum and high stability electrolytic capacitors.) |
| Type | No indication ··· Ceramic, general electrolytic (see circuit symbol to distinguish from ceramic.)<br>MYL ····· Mylar (Polyester film)<br>STY ····· Styrol<br>TA ····· Tantalum<br>KU ····· High stability electrolytic<br>MP ····· Metallized paper |

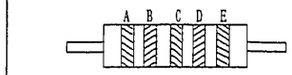
Example
C210
0.01/25 ····· Mylar, 0.01μF, 25WV
MYL.J ±5%

### 2. Markings in Schematic and Circuit Board Diagrams

(1) Parts with marks "■" attached to circuit numbers in the schematic and circuit board diagrams are discrete components.
(2) Parts with marks "●" attached to circuit numbers in the schematic and circuit board diagrams are chip components.
(3) Parts with marks Ⓩ in the circuit board diagrams are leadless jumpers.

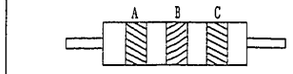
### 3. How to Read Capacitance of Resistance-Type Capacitors and Coils

〔CAPACITOR〕




CAPACITY : (10A+B)×C (PF)
TOLERANCE : D
RATED VOLTAGE : BODY COLOR
PINK : 25V
GREEN : 50V
CHARACTERISTICS : E

〔COIL〕




INDUCTANCE : (10A+B)×C (μH)

| COLOR | A, B | C | D | E |
|---|---|---|---|---|
| Black | 0 | $10^0$ | ±20% | For temperature compensation |
| Brown | 1 | $10^1$ | | |
| Red | 2 | $10^2$ | | |
| Orange | 3 | $10^3$ | | |
| Yellow | 4 | $10^4$ | | |
| Green | 5 | $10^5$ | | |
| Blue | 6 | | | |
| Violet | 7 | | | |
| Gray | 8 | | ±30% | High dielectric constant type |
| White | 9 | | | For temperature compensation |
| Gold | | $10^{-1}$ | ± 5% | |
| Silver | | $10^{-2}$ | ±10% | High dielectric constant type |

### 4. Cautions on Use of MOS ICs

(1) MOS ICs are inserted in black foam for shipment. This foam is a conductor which short-circuits between the leads to prevent damage. Do not remove ICs from this foam during storage. Avoid removing ICs from this foam, placing them on plastic which is likely to be charged with static electricity or inserting them into styrol foam.
(2) High voltages may be applied during soldering caused by leakages from the soldering iron. Be sure to ground the tip of the soldering iron or use a low voltage soldering iron.
(3) The human body and clothes made of synthetic fiber or nylon gloves may be charged with several thousand volts of static electricity because of friction. Workers should be grounded.

## LEADLESS (CHIP) COMPONENT IDENTIFICATION

1. Leadless Transistor

The part name of a leadless transistor is indicated by a code on its surface, using one letter, one letter and one numeral, two letters, two letters and one numeral, two numerals, two numerals and one letter, three letters, or four letters.

Note: There are transistors with the same code but differnt part names, or with the same part name but different codes. Refer to the parts lists to finally identify a transistor.

| CODE | PART NAME | CODE | PART NAME |
|---|---|---|---|
| Leadless (Chip) Transistor | | | |
| 3925 | 2SC3925 | BR | 2SC2412K |
| 1CQ | 2SB902 | BR | 2SC4617 |
| 1D | 2SC3127 | BS | 2SC2412K |
| 1DS | 2SD1328S | C-7 | 2SA811 |
| 1DT | 2SD1328 | C1G | KSC1623 |
| 1R | 2SB970TX | CB | 2SC3646 |
| 2BQ | 2SK374PQ | CC | 2SA1122C |
| 2BR | 2SK374QR | CC | 2SC3647T |
| 2Y | 2SC3757 | CC | 2SC3647 |
| 2YQ | 2SC4691 | CD | 2SA1122D |
| 3N | 2SK620 | CE | 2SA1122E |
| 4N | XN5601 | CK | 2SD999 |
| 4Q | XN1B301 | CP | 2SC4097 |
| 4R | XN1C301 | CQ | 2SC2411K |
| 5C | XN4601 | CR | 2SB710 |
| 5C | XP4601 | CR | 2SC2411 |
| 5H | XP4501 | CR | 2SB1219 |
| 5H | XN4501 | D16 | 2SC1622A |
| 5K | XP4401 | D17 | 2SC1622A |
| 5K | XN4401 | D18 | 2SC1622A |
| 5L | XN5501 | DB | 2SD1766 |
| 5N | XN6501 | DE | 2SC2463 |
| 5O | XN6401 | DF | 2SD1623 |
| 5R | XP1501 | DF | 2SD1898 |
| 5R | XN1501 | DG | 2SD1624 |
| 5S | XN1504 | DK | 2SB798 |
| 5V | XN1401 | EC | 2SA1022 |
| 5W | XN2501 | F-2 | 2SC1009F2 |
| 5X | XN4504 | F-3 | 2SC1009F3 |
| 7R | XN2401 | F-4 | 2SC1009F4 |
| 7S | XN1601 | FC | 2SC2619 |
| AA | 2SD1757K | FR | 2SA1774 |
| AKQ | 2SA1738 | FR | 2SA1037K |
| AKQ | 2SA1806 | FR | 2SA1576R |
| AL | 2SA1791 | FS | 2SA1037K |
| AM | 2SC4656 | GC | 2SC2734 |
| AO | 2SB709AQR | GM | 3SD1615 |
| AQ | 2SB709AQ | HQ | 2SA1036K |
| AQ | 2SB766 | IC | 2SC3016 |
| AR | 2SB1462 | IRD | 2SA1484 |
| AR | 2SB766 | IS | 2SB792S |
| AR | 2SB709ARS | IT | 2SB792T |
| AR | ASB1218R | L-4 | 2SC1623L4 |
| AS | 2SB766 | L-5 | 2SC1623L5 |
| AS | 2SB709AS | L-6 | 2SC1623L6 |
| B3 | 2SC1621B3 | L-6 | 2SC2812L6 |
| B4 | 2SC1621B4 | L-7 | 2SC2812L7 |
| BC | 2SB1188 | L5 | MMBC1623L5 |
| BD | 2SB1121 | L6 | MMBC1623L6 |
| BE | 2SB1260 | LB | 2SC2462B |
| BF | 2SB1123 | LC | 2SC2462C |
| BF | 2SB1308 | LD | 2SC2462D |
| BG | 2SB1124 | LR | 2SC2412KLN |
| BH | 2SB1001 | M-5 | 2SA812 |
| BQ | 2SB709A | M-6 | 2SA1179 |
| BR | 2SC4081R | MC | 2SA1052MC |
| MD | 2SA1052MC-D | ZS | 2SD874S |
| N3 | 2SC1653 | VR | 2SD968A |
| ND | 2SD1306ND | W1 | FMW1 |
| NE | 2SD1306NE | W10 | FMW10 |
| PD | 2SA1171D | W2 | FMW2 |
| PS | 2SD814 | W3 | FMW3 |
| QB | 2SC2620QB | WR | 2SD602 |
| QC | 2SC2620QC | X1 | UMX1 |
| QO | 2SC2714 | X1 | IMX1 |
| R22 | 2SC4226 | X2 | IMX2 |
| R22 | 2SC3356 | Y1 | FMY1 |
| R32 | 2SC4227 | Y12 | 2SA1464 |
| R34 | 2SC3583 | Y25 | NTM3906 |
| R42 | 2SC3585 | Y3 | FMY3 |
| RB | 2SC2618RB | YCD | 2SK197 |
| RC | 2SC2618RC | YI | 2SA1666 |
| RK | 2SC3357 | YQ | 2SD601YQ |
| S1 | FMS1 | YR | 2SD601YR |
| S2 | FMS2 | YR | 2SD1819R |
| SC | 2SA1121 | YR | 2SD2216 |
| SO | 2SA1162 | YS | 2SD601YS |
| SP | 2SC3082K | Z1 | IMZ1 |
| T1 | IMT1 | Z2 | IMZ2 |
| T1 | UMT1 | Z0 | 2SD874T |
| T2 | IMT2 | ZQ | 2SD601A |
| UD | 2SC2404 | ZR | 2SD874R |
| Digital Transistor | | | |
| 3 | DTC143TK | 6C | UN9113 |
| 4 | DTC114TK | 6S | XP4113 |
| 6 | DTC144TK | 8B | UN5212 |
| 13 | DTA143EK | 8C | UN9213 |
| 14 | DTA144EK | 8C | UN2213 |
| 15 | DTA124K | 8S | XP4213 |
| 15 | DTA124EU | 9L | XP1213 |
| 16 | DTA144EU | 9L | XN1213 |
| 16 | XDA144EK | A1 | FMA1 |
| 16 | DTA144EE | A1 | UMA1 |
| 23 | DTC143EK | A2 | FMA2 |
| 24 | DTC114EU | B2 | UMB2 |
| 24 | DTC144EK | B2 | IMB2 |
| 25 | DTC124EU | C2 | FMC2 |
| 25 | DTC124K | C5 | FMC5 |
| 26 | DTC144EE | D2 | IMD2 |
| 26 | DTC144EU | F52 | DTB123 |
| 26 | XDC144EK | G1 | FMG1 |
| 33 | DTA143XK | G2 | FMG2 |
| 43 | DTC143XK | G21 | DTD113ZK |
| 52 | DTA123YK | G5 | FMG5 |
| 60 | UN511F | H03 | DTC343TK |
| 64 | DTC114YK | H2 | IMH2 |
| 80 | UN521F | H2 | UNH2 |
| 4P | XN1A312T | H27 | DTC363EK |
| 6B | UN5112 | R04 | XSR1104 |
| 6C | UN2113 | R31 | FP1L2Q |
| FET | | | |
| 30 | 2SK621 | WS | 2SK322T |
| 1FQ | 2SK321FQ | WT | 2SK322T |
| 1FR | 2SK321FQR | X15 | 2SK425 |
| 1KP | 2SK316 | X4 | 2SK94 |
| 2BQ | 2SK663 | XAF | 2SK980FG |
| DY | 2SK1579 | YC | 2SK197YC |
| J0 | 2SK208 | YD | 2SK197YD |
| K | 3SK166 | YE | 2SK197YE |
| K4 | 2SK160K4 | ZD | 2SK217ZD |
| K5 | 2SK160K5 | ZE | 2SK217ZE |
| KB | 2SK323 | | |

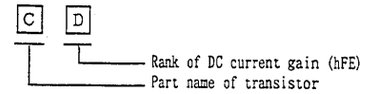


(1) Identification with two letters

Use this code and the following chart for transistor identification.

Example:

| Code | Part name |
|---|---|
| CD | 2SA1122D |
| LD | 2SC2462D |

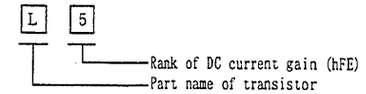



(2) Identification with one letter and one numeral

Use this code and the following chart for transistor identificaion.

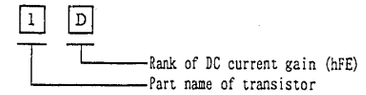
Example:

| Code | Part name |
|---|---|
| L5 | 2SC1623(5) |
| L6 | 2SC1623(6) |




Example:

| Code | Part name |
|---|---|
| 1D | 2SC3127D |



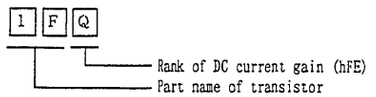

Note: Codes S1,S2,T1,W1,W2,W3,X1,Y1,Y3,Z1 and Z2 encode only the part names.

(3) Identification with one numeral and two letters

Use this code and the following chart for tarnsistor identification.

Example:

| Code | Part name |
|---|---|
| 1FQ | 2SK321Q |

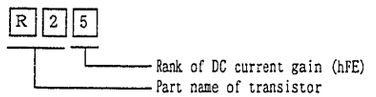



(4) Identification with one letter and two numerals

Use this code and the following chart for transistor identificaion.

Example:

| Code | Part name |
|---|---|
| R25 | 25C3356 |

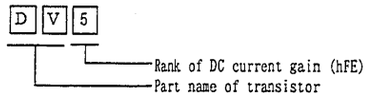



(5) Identification with to letters and one numeral

Use this code and the following chart for transistor identification.

Example:

| Code | Part name |
|---|---|
| DV5 | 2SD596 |

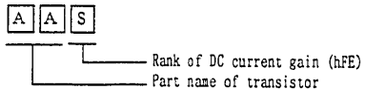



(6) Identification with three letters

Use this code and the following chart for transistor identification.

Example:

| Code | Part name |
|---|---|
| AAS | 2SD1757KS |




2. Leadless Diode

The part name of a leadless diode is indicated by a code on the surface, using one letter and one numeral, two letters, two letters and one numeral, two numerals and one letter, or three numerals. Use this code and the following table to identify the part name of a diode.

Note: Refer to the parts lists to finally identify a diode.

| CODE | PART NAME | CODE | PART NAME |
|---|---|---|---|
| Diode | | | |
| 0 | HVU300A | 3D | RB715F |
| 1.0 | 1SV201 | 3.0L | MA3030L |
| 2.0 | MA3020 | 3.6L | MA3036L |
| 5.1 | MA3051L | 3.9L | MA3039L |
| 5.1 | MA3051M | 4.3H | MA3043H |
| 6.8 | MA3068 | 4.3L | MA3043L |
| 6.8 | MA3068M | 4.3M | MA3043M |
| 7.5 | MA3075L | 4.7L | MA3047L |
| 8.2 | MA3082M | 4.7M | MA3047M |
| 9.1 | MA3091 | 5.1H | MA3051H |
| 20 | HZM6 | 5.1L | MA3051L |
| 24 | 1SV221 | 5.1M | MA3051M |
| 27 | RD2.7M B | 5.6M | MA3056M |
| 30 | RD3.0M B | 6.2L | MA3062L |
| 51 | RD5.1M B2 | 6.2M | MA3062M |
| 56 | RD5.6M B | 6.8H | MA3068H |
| 91 | RD9.1M B | 6.8L | MA3068L |
| 102 | RD10M B2 | 6.8M | MA3068M |
| 122 | RD12M B2 | 6.8M | MA3068 |
| 163 | RD16M B3 | 7.5H | MA3075H |
| 182 | RD10M B2 | 7.5L | MA3075L |
| 271 | RD2.7M B | 8A | UN221D |
| 272 | D2.7M B2 | 8.2H | MA3082H |
| 301 | RD3.0M B | 8.2M | MA3082M |
| 362 | D3.6M B2 | 9.1M | MA3091M |
| 391 | D3.9M B1 | 9.1M | MA3091 |
| 512 | RD5.1M B2 | 10L | MA3100L |
| 561 | RD5.6M B | 10M | MA3100M |
| 621 | RD6.2M B1 | 11L | MA3110L |
| 681 | RD6.8M | 12M | MA3120M |
| 683 | RD6.8M B3 | 13H | MA3130H |
| 911 | RD9.1M B | 18M | MA3180M |
| 2.7H | MA3027H | 36M | MA3360 |
| Zener Diode | | | |
| 1A | MA110 | M3A | MA199 |
| A3 | 1S2835 | MC | MA153 |
| A4 | HSM2836C | MC | MA143 |
| A5 | 1S2837 | MH | MA141K |
| A6 | HSM2838C | MH | MA151K |

| CODE | PART NAME | CODE | PART NAME |
|---|---|---|---|
| | Zener Diode | | |
| B | SB0505CP | MH | MA152K |
| B64 | SFPB64 | MI | MA132K |
| B74 | SFPB74 | MN | MA141WA |
| BE | 1SV172 | MN | MA152WK |
| C1 | HSM88S | MN | MA151WA |
| C2 | HSM276S | MO | MA132WA |
| C3 | 1SS226 | MO | MA152WA |
| C4 | HSM88WK | MP | MA133 |
| F7 | KV1470 | MT | MA151WK |
| H5 | HVM14 | MT | MA141WK |
| J | SB07-03C | MU | MA132WK |
| K | DA221 | MU | MA151WA |
| M1A | MA159 | N | DAN222 |
| M1C | MA158 | N | DAN202T |
| M1M | MA721 | NU | MA152WK |
| M1N | MA713DAT | P | DAP202T |
| M1P | MA714 | S4 | D1FS4 |
| M2A | MA122 | SA | SB10-05P |
| M2B | MA123 | Z | DA106K |

3. Leadless Resistor
The resistor value is indicated on its surface, using three numerals, or one letter and one numeral.

(1) Identification with three numerals
Read this code following the same procedure as when reading the color code on discrete resistors.

Example :

| code | value |
|---|---|
| 330 | 33 x $10^0$ = 33 ohms |
| 561 | 56 x $10^1$ = 560 ohms |
| 123 | 12 x $10^3$ = 12K ohms |
| 1R2 | 1 + 0.2 = 1.2 ohms (R : Decimal point) |

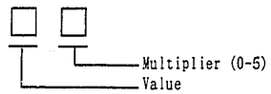



(2) Identification with one letter and one numeral
Use this code and the following chart for resisitor identification.

| Letter | Value | Letter | Value | Letter | Value |
|---|---|---|---|---|---|
| A | 1 | J | 2.2 | S | 4.7 |
| C | 1.2 | L | 2.7 | U | 5.6 |
| E | 1.5 | N | 3.3 | W | 6.8 |
| G | 1.8 | Q | 3.9 | Y | 8.2 |

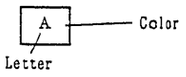
Example :

| code | value |
|---|---|
| A1 | 1 x $10^1$ = 10 ohms |
| G2 | 1.8 x $10^2$ = 180 ohms |
| L3 | 2.7 x $10^3$ = 2700 ohms |
| S4 | 4.7 x $10^4$ = 47K ohms |
| W5 | 6.8 x $10^5$ = 680K ohms |




4. Leadless Capacitors
The capacitor value is indicated on its surface, using body color and one letter, or one letter and one numeral.

(1) Identification with body color and one letter




| Body Color | Letter | Value | Body Color | Letter | Value |
|---|---|---|---|---|---|
| Red | A | 1(PF) | Blue | A | 100(PF) |
| | C | 2 | | C | 120 |
| | E | 3 | | E | 150 |
| | G | 4 | | G | 180 |
| | J | 5 | | J | 220 |
| | L | 6 | | L | 270 |
| | N | 7 | | N | 330 |
| | Q | 8 | | Q | 390 |
| | S | 9 | | S | 470 |
| Black | A | 10(PF) | | U | 560 |
| | C | 12 | | W | 680 |
| | E | 15 | | Y | 820 |
| | G | 18 | White | A | 0.001(μF) |
| | J | 22 | | E | 0.0015 |
| | L | 27 | | J | 0.0022 |
| | N | 33 | | L | 0.0027 |
| | Q | 39 | | N | 0.0033 |
| | S | 47 | | S | 0.0047 |
| | U | 56 | | W | 0.0068 |
| | W | 68 | Green | A | 0.01(μF) |
| | Y | 82 | | E | 0.015 |
| | | | | J | 0.022 |
| | | | | N | 0.033 |
| | | | | S | 0.047 |
| | | | | U | 0.056 |
| | | | | W | 0.068 |
| | | | | Y | 0.082 |
| | | | Yellow | A | 0.1(μF) |

Example : Color / Letter / Value
Red / A / 1PF
Black / A / 10PF

(2) Identification with one letter and one numeral



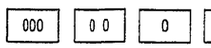

| Letter/Numeral | Value | Letter/Numeral | Value |
|---|---|---|---|
| A0 | 1(PF) | A2 | 100(PF) |
| H0 | 2 | C2 | 120 |
| M0 | 3 | E2 | 150 |
| d0 | 4 | G2 | 180 |
| f0 | 5 | J2 | 220 |
| m0 | 6 | L2 | 270 |
| n0 | 7 | N2 | 330 |
| t0 | 8 | Q2 | 390 |
| y0 | 9 | S2 | 470 |
| A1 | 10(PF) | U2 | 560 |
| C1 | 12 | W2 | 680 |
| E1 | 15 | Y2 | 820 |
| G1 | 18 | A3 | 0.001(μF) |
| J1 | 22 | E3 | 0.0015 |
| L1 | 27 | J3 | 0.0022 |
| N1 | 33 | N3 | 0.0033 |
| Q1 | 39 | S3 | 0.0047 |
| S1 | 47 | W3 | 0.0068 |
| U1 | 56 | A4 | 0.01(μF) |
| W1 | 68 | E4 | 0.015 |
| Y1 | 82 | J4 | 0.022 |
| | | N4 | 0.033 |
| | | S4 | 0.047 |
| | | U4 | 0.056 |
| | | W4 | 0.068 |
| | | A5 | 0.1 |

Example :

| Letter/Numeral | Value |
|---|---|
| A0 | 1PF |
| A1 | 10PF |

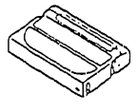
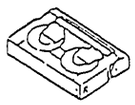
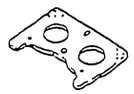
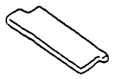
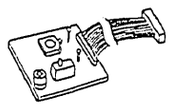
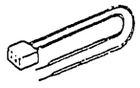
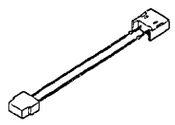
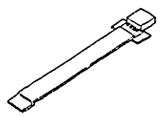
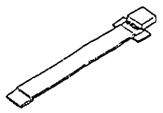
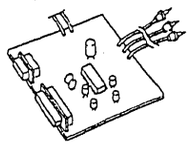
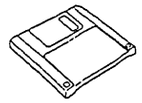
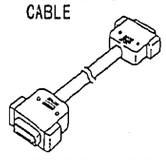
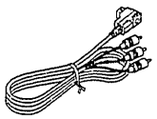
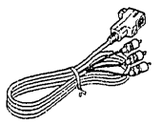
5. Leadless Jumper
The leadless jumper is indicated as shown below.

(1) (2) (3) (4)






## JIGS AND TAPES FOR ADJUSTMENT

| | | | |
|---|---|---|---|
| 1. ALIGNMENT TAPE COLOR BAR/400Hz (20HSC-2) No.7099231  | 2. CASSETTE TORQUE METER SRK-8T-132 No.7099235 SRK-8T-112 No.7099385  | 3. MASTER PLANE No.7099237  | 4. REEL DISK HEIGHT JIG No.7099238  |
| 5. SPECIAL DRIVER No.7099239 | 6. ATF-R JIG (SW3:ON) No.7099461  | 7. C12 LIGHT BALANCE FILTER 46mmφ No.7099369 | 8. 2-PIN EXTENSION CABLE No.7099283  |
| ※9. 2-PIN EXTENSION CABLE No.7069038  | ※10. 10-PIN EXTENSION CABLE No. 7069039  | ※11. 9-PIN EXTENSION CABLE No.7069040  | ※12. 17-PIN EXTENSION CABLE No.7069033 |
| 13. DSP AV OUTPUT JIG No.7099456 | 14. DSP-R JIG No.7099448  | ※15. CAMERA ADJ. FLOPPY DISK No.7069032  | ★16. PERSONAL COMPUTER |
| ★17. PERSONAL COMPUTER 9-PIN or 25-PIN CABLE  | ◎18. AV OUTPUT CABLE  | ◆19. AV INPUT CABLE  | |

MARKS
※ : New jigs and tools
★ : Goods on the Market
◆ : Optional Accessory
◎ : Accessory

Note 1: Always set SW3 on the ATF-R jig to ON.
Note 2: The ATF jig (No.7099386) can also be used in place of ATF-R jig to adjust this model.
Note 3: The DSP jig (No.7099442) can also be used in place of DSP-R jig to adjust this model.
Note 4: The illustration shows a stereo AV input cable, but the adjustments can also be performed with a monaural input cable.
Note 5: The illustration shows a stereo AV output cable, but a monaural output cable is provided with this unit. The adjustments can also be performed with a monaural output cable.

## HOW TO USE THE EXTENSION CABLE

| No. | NAME OF EXTENSION CABLE | PARTS No. | HOW TO USE (PURPOSE OF USE) |
|---|---|---|---|
| 8 | 2-PIN EXTENSION CABLE | 7099283 | • For power supply. (Red: Negative, Brown: Positive)<br>• Power supply cable after the case removed. |
| 9 | 2-PIN EXTENSION CABLE | 7069038 | • Installed between the main circuit board and loading motor. |
| 10 | 10-PIN EXTENSION CABLE | 7069039 | • Installed between the main circuit board and cylinder.<br>Note: Using this extension cable causes noise to occur in the playback picture. This cable is used to check voltage and waveforms. Check the picture quality in the regular connection state. |
| 11 | 9-PIN EXTENSION CABLE | 7069040 | • Installed between the main circuit board and capstan motor. |
| 12 | 17-PIN EXTENSION CABLE | 7069033 | • Installed between the sensor and main circuit boards. |

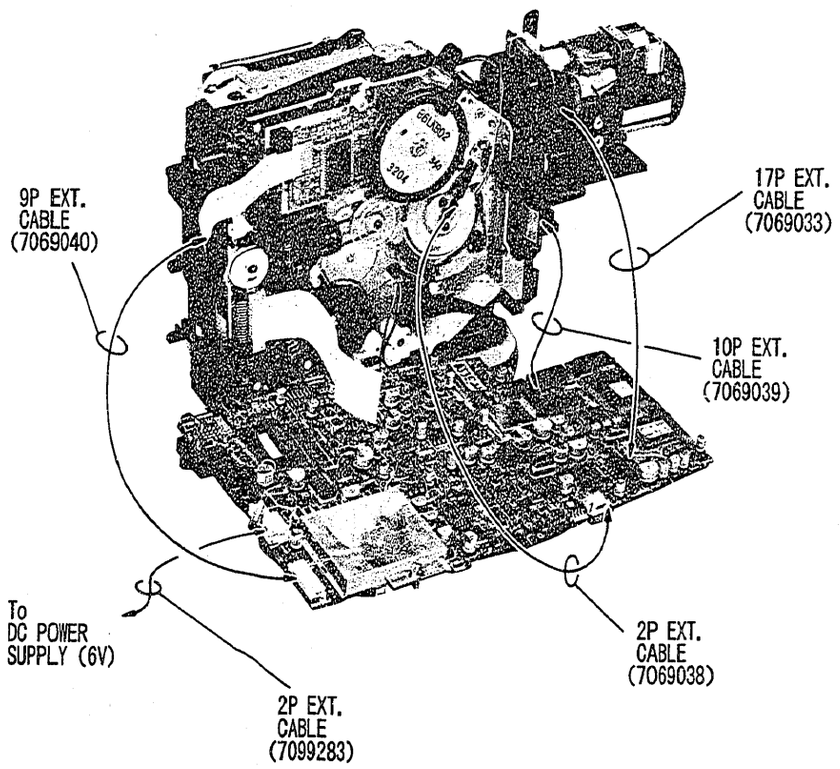

9P EXT. CABLE (7069040)
17P EXT. CABLE (7069033)
10P EXT. CABLE (7069039)
To DC POWER SUPPLY (6V)
2P EXT. CABLE (7099283)
2P EXT. CABLE (7069038)

Fig. 1-1



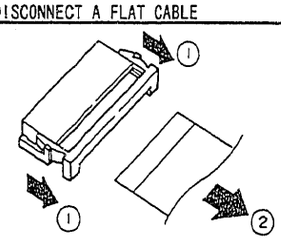
CHAPTER 2

# DISASSEMBLY

**CAUTION**

1. When dismantling the lens block, never remove components other than the zoom motor, iris block, focus motor and flat cable of the lens.
2. Set the camera/recorder to the eject state before dismantling it. If the camera/recorder will not enter the eject state due to a defect, refer to "2. DISASSEMBLY METHOD WHEN TROUBLE OCCURS".
3. Disconnect flat cables from connectors by the procedure shown in Fig. A. Since many circuit boards in the camera/recorder are connected by in-board connectors, be sure to follow DISASSEMBLY when removing the circuit boards.

HOW TO DISCONNECT A FLAT CABLE




① Release the lock of the connector on the left and right simultaneously.
② Pull out the flat cable.

Fig. A

## 1. IDENTIFICATIONS OF MAJOR COMPONENTS

Numbers in ( ) show the numbers of Figs. that describe how to remove the components.

### 1.1 Major Components and Circuit Boards

#### 1.1.1 Main Block Section

| | | |
|---|---|---|
| 1. | Cassette Lid | (3-1) |
| 2. | Left Case | (3-4) |
| 3. | Top Cover | (3-1) |
| 4. | Microphone (MIC) | (3-4) |
| 5. | Camera Block | (3-4) |
| 6. | Rubber Ring | (3-1) |
| 7. | Lens Hood Holder | (3-1) |
| 8. | Lens Hood | (---) |
| 9. | Right Case Assembly | (3-1) |
| 10. | Main Circuit Board | (3-5) |
| 11. | VCR Frame | (3-5) |
| 12. | Tape Transport Mechanism | (3-5) |

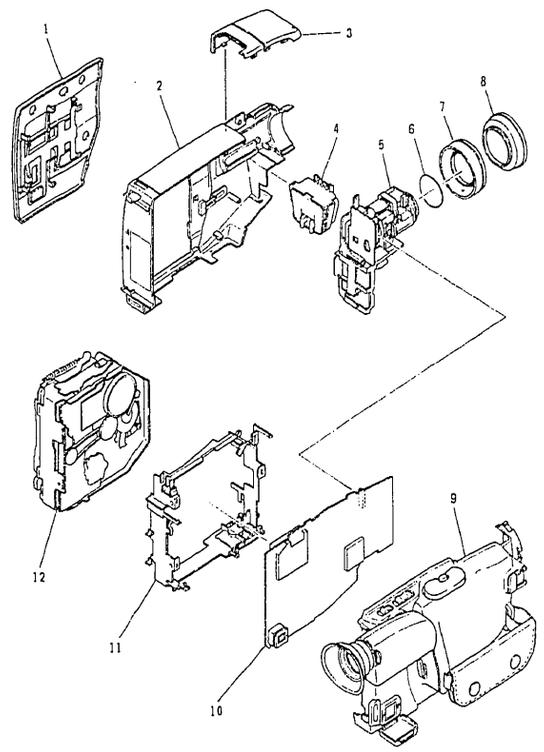



Fig. 1-1

### 1.1.2 Right Case Section

| | | |
|---|---|---|
| 1. | REC SW/Batt. Circuit Board | (3-3) |
| 2. | T/W SW Unit | (3-3) |
| 3. | Right Case | (3-3) |
| 4. | DC Light Terminal | (3-3) |
| 5. | Hand Starp | (3-3) |
| 6. | AV Jack Cover | (3-3) |
| 7. | Electronic Viewfinder (EVF) Block | (3-3) |

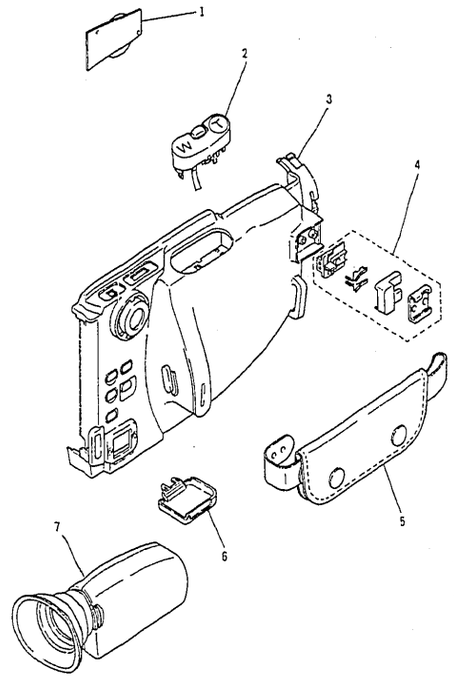



Fig. 1-2

### 1.1.3 Camera Block Section

| | | |
|---|---|---|
| 1. | Sensor Circuit Board | (3-6) |
| 2. | Sensor Plate | (3-6) |
| 3. | CCD Image Sensor | (3-6) |
| 4. | Sensor Guide | (3-6) |
| 5. | Sensor Rubber | (3-6) |
| 6. | Crystal Filter | (3-6) |
| 7. | Sensor Cover | (3-6) |
| 8. | Lens Block | (3-6) |
| 9. | Camera Frame | (3-3) |
| 10. | Wiring/Switch Unit | (3-3) |
| 11. | H. (Horizontal) Gyro Circuit Board | (3-3) |
| 12. | V. (Vertical) Gyro Circuit Board | (3-3) |

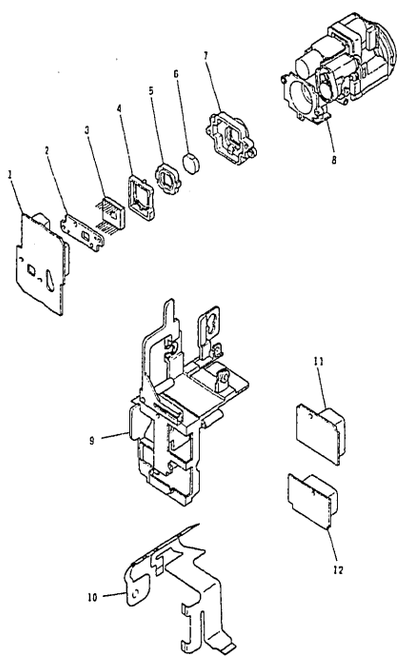


Fig. 1-3



### 1.1.4 Electronic Viewfinde (EVF) Section

| | | |
|---|---|---|
| 1. | EVF Left Case | (3-7) |
| 2. | CRT Top Cover | (3-7) |
| 3. | CRT | (3-7) |
| 4. | Electronic Viewfinder (EVF) Circuit Board | (3-7) |
| 5. | CRT Bottom Cover | (3-7) |
| 6. | EVF Right Case | (3-7) |
| 7. | Clear Cover | (3-7) |
| 8. | EVF Lens | (3-7) |
| 9. | Eye Cup | (3-7) |

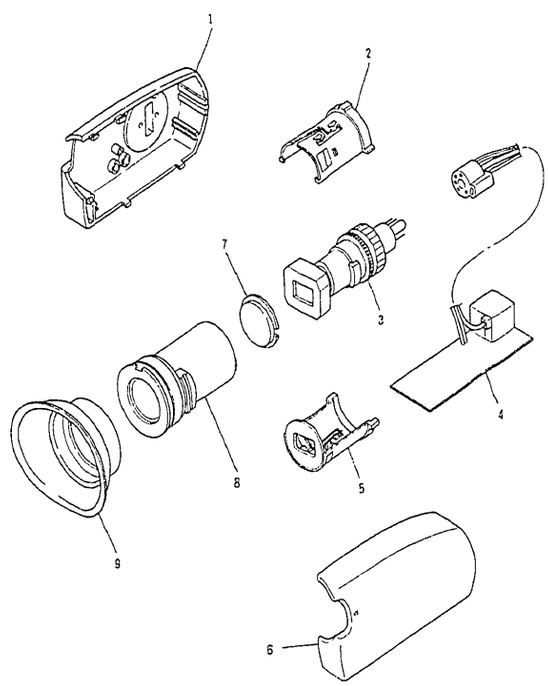


Fig. 1-4

### 1.1.5 Lens Section

| | | |
|---|---|---|
| 1. | Iris Block | (3-8) |
| 2. | Focus Motor | (3-8) |
| 3. | Lens | (3-8) |
| 4. | Zoom Motor | (3-8) |
| 5. | Position Sensor | (3-8) |
| 6. | Lens Flat Cable | (3-8) |

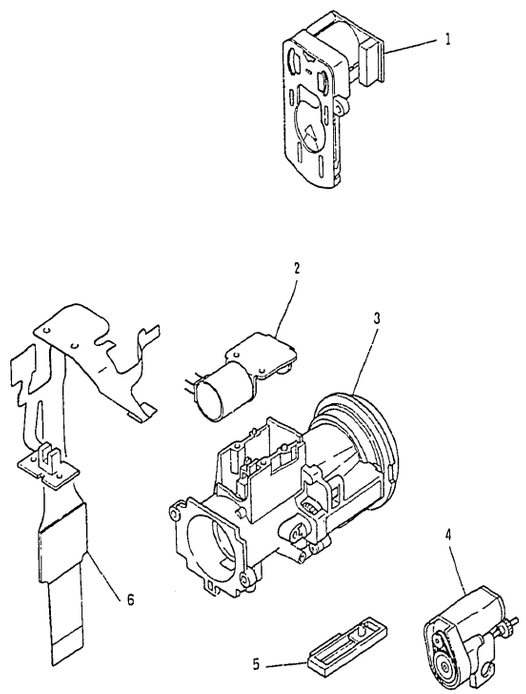


Fig. 1-5

## 1.2 Major Tape Transport Mechanism Components

### 1.2.1 Top View

| | | |
|---|---|---|
| 1. | Cylinder | (4-2) |
| 2. | Capstan Motor | (4-1, 2) |
| 3. | Loading Motor | (4-2) |
| 4. | Pull-out Pole | (4-3, 4) |
| 5. | Loading Gear (1) | (4-2) |
| 6. | Loading Gear (2) | (4-2) |
| 7. | Pressure Roller Cam Gear | (4-3, 4) |
| 8. | Pressure Roller | (4-4) |
| 9. | Loading Relay Gear (1) | (4-7) |
| 10. | Take-up Reel Brake | (4-4) |
| 11. | Eject Lock Drive Arm | (4-6) |
| 12. | Take-up Reel Disk | (4-5) |
| 13. | Reel Drive Idler | (4-6) |
| 14. | Take-up Guide Roller | (4-5) |
| 15. | Loading Relay Gear (3) | (4-7) |
| 16. | Supply Reel Disk | (4-6) |
| 17. | Supply Reel Brake | (4-6) |
| 18. | Tension Band Holder (Tension Band) | (4-6) |
| 19. | Eject Arm | (4-6) |
| 20. | Tension Spring | (4-6) |
| 21. | Tension Arm | (4-6) |
| 22. | Supply Guide Roller | (4-5) |
| 23. | Impedance Roller | (4-5) |
| 24. | Dew Sensor | (4-4) |

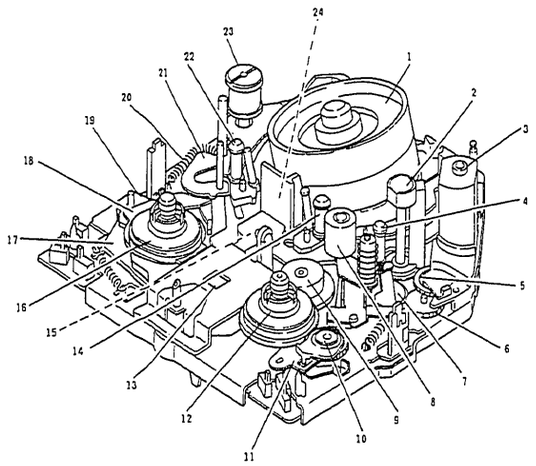


Fig. 1-6

### 1.2.2 Bottom View

| | | |
|---|---|---|
| 1. | Capstan Motor | (4-1, 2) |
| 2. | Pulley Gear | (4-4) |
| 3. | Static Discharge Brush | (4-2) |
| 4. | Trouble Sensor Circuit Board | (4-4) |
| | • End LED | |
| | • Supply and Take-up End Sensors | |
| | • Supply and Take-up Reel Sensors | |
| | • Safety Tab Switch | |
| | • Tape Select Switch | |
| | • Hi-8 Tape Switch | |
| | • Cassette Holder Switch | |
| | • Mechanism State Switch | |
| 5. | Capstan Belt | (4-4) |
| 6. | Center Gear | (4-4) |

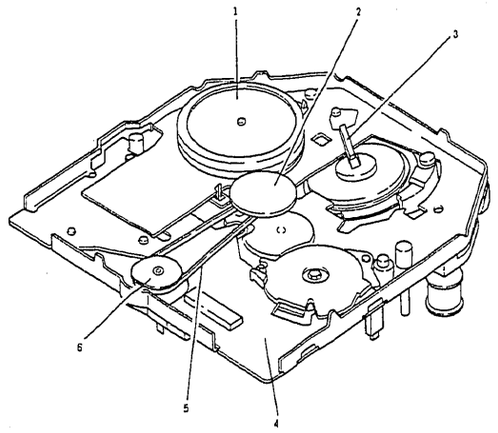


Fig. 1-7



## 2. HOW TO SET TO THE EJECT STATE MANUALLY

Note: This is not necessary for camera/recorders which are set to the eject state normally.

1) Lift the cassette lid in the direction of arrow (A) and insert tweezers between the cassette lid and left case. (Fig. 2-1)
2) Release two (2) tabs (C) of the plate spring in the cassette lid in the direction of arrows (B) and remove the cassette lid in the direction of arrow (D).

Note: If the electrical circuit is defective, connect a power supply directly to the loading motor that can be seen through hole (E) in the left case; the camera/recorder can be set to the eject state. (Fig. 2-2) Be careful of the following when supplying power.

① Set the power supply to 3-5 V DC. (Do not apply more than 5V as this could result in a secondary defect.)
② Connect the red wire to the positive terminal and the brown wire to the negative terminal to activate unloading. Connect the brown wire to the positive terminal and the red wire to the negative terminal to activate loading.

3) Remove the following parts in advance, referring to subsequent items.

| | |
|---|---|
| • Lens hood holder | (Fig. 3-2) |
| • Top cover | (Fig. 3-2) |
| • Open the right case | (Fig. 3-2) |
| • Main block | (Fig. 3-4) |
| • Main circuit board | (Fig. 3-5) |
| • VCR frame and tape transport mechanism | (Fig. 3-5) |
| • Loading motor | (Fig. 4-2) |

4) Turn the Loading Gear (1) in the direction of arrow (F) to unload. (Fig. 2-3)

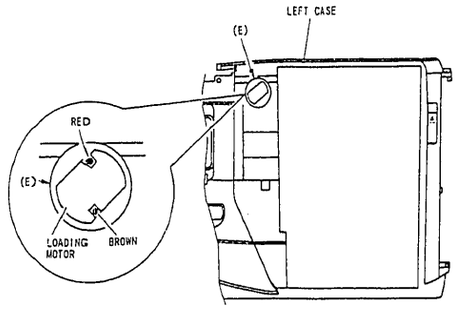



Fig. 2-2

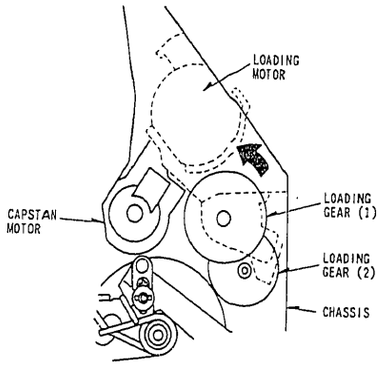
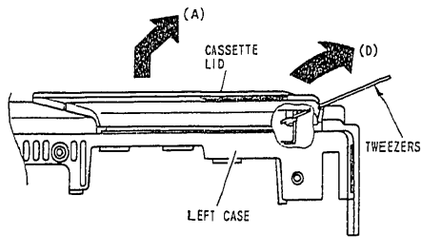



Fig. 2-3



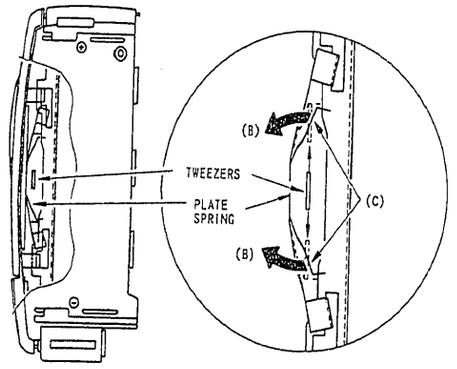




Fig. 2-1

## 3. NORMAL DISASSEMBLY METHOD

Perform the following to dismantle the camera/recorder if unloading is performed normally (the camera/recorder can be set to the eject state). If unloading cannot be done, refer to "2. HOW TO SET TO THE EJECT STATE MANUALLY".

### 3.1 CASES AND CIRCUIT BOARDS

#### 3.1.1 Cassette Lid, Lens Hood Holder, Top Cover, and Right Case Removal

Note: Set the unit to the eject state and remove the lens cap from the lens hood.

**A.** Cassette Lid (Figs. 3-1, 3-2)

1) Release tabs of the plate spring on the cassette lid in the direction of the arrows. (Fig. 3-1)
2) Remove the cassette lid in the direction of the arrow. (Fig. 3-2)

**B.** Lens Hood Holder (Fig. 3-2)

1) Remove one (1) screw.
2) Turn the lens hood holder in the direction of the arrow.
3) Remove the lens hood holder in the direction of the arrow.

Note: The rubber ring is removed on its own when the lens hood holder is removed. Be sure to reinstall the rubber ring as show in Fig. 3-2.

**C.** Top Cover (Fig. 3-2)

| Components to remove in advance | Fig No. |
|---|---|
| • Lens Hood Holder | 3-2 |

1) Remove the top cover in the direction of the arrow.

**D.** Open the Right Case (Fig. 3-2)

| Components to remove in advance | Fig No. |
|---|---|
| • Lens Hood Holder | 3-2 |

1) Open the AV jack cover.
2) Remove six (6) screws.
3) Open the right case in the direction of the arrow.
4) Disconnect three (3) connectors and one (1) flat cable.

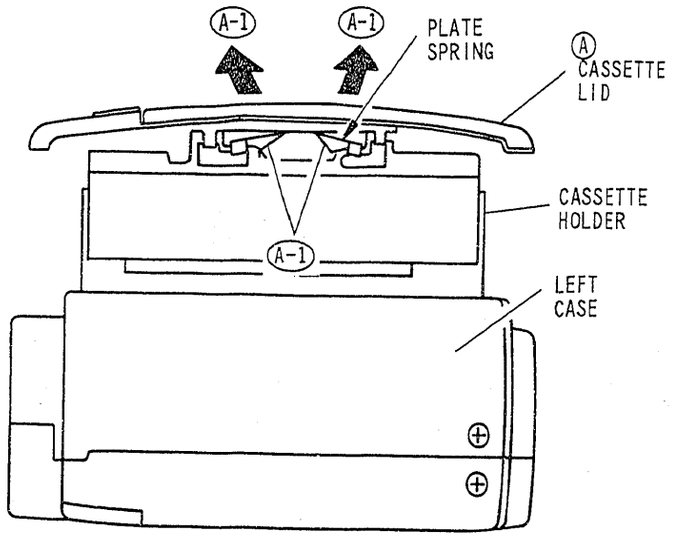
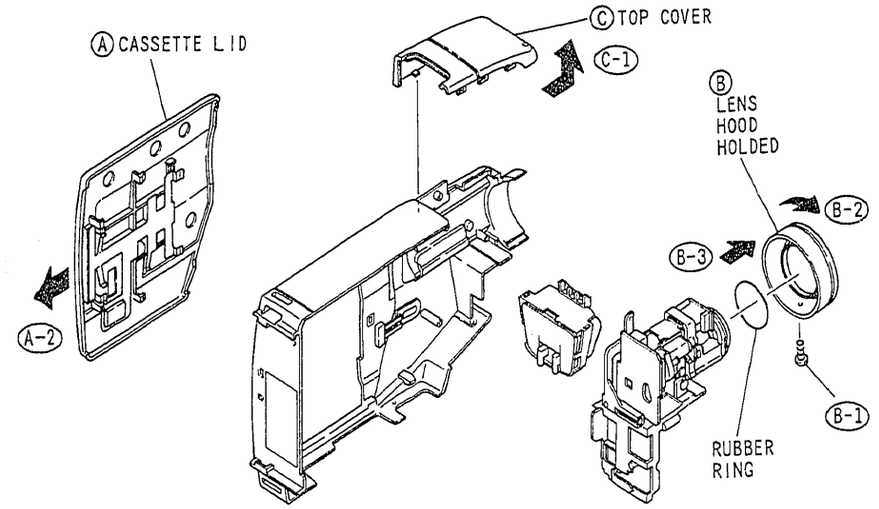



Fig. 3-1





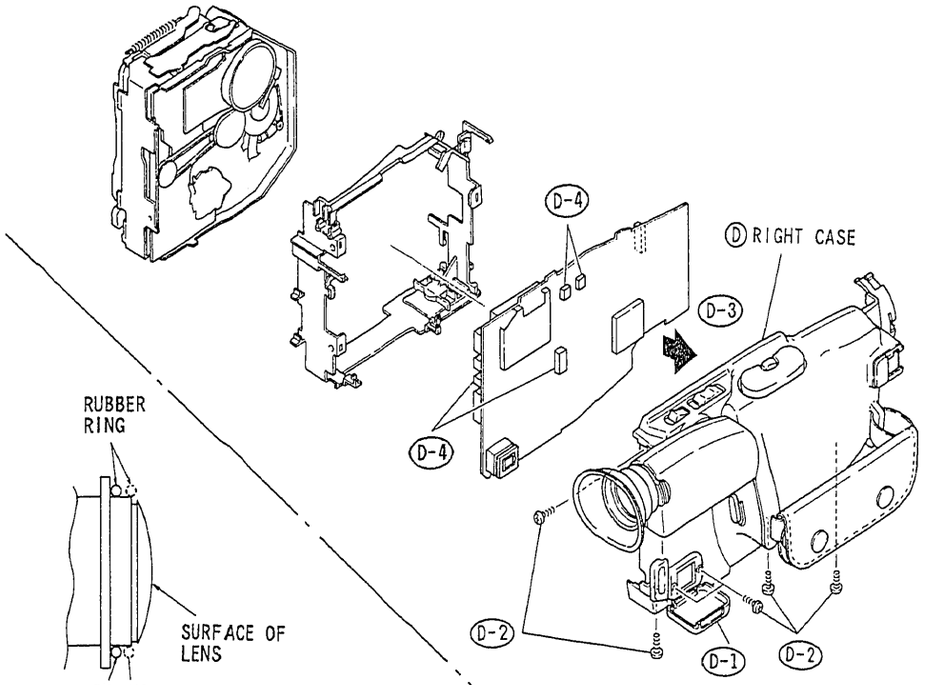




Fig. 3-2

### 3.1.2 Electronic Viewfinder (EVF) Block, REC SW/Batt. Circuit Board, T/W SW Unit, Accessory Shoe and DC Light Terminal, Hand Strap, AV Jack Cover and Right Case Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Lens Hood Holder | 3-2 |
| • Top Cover | 3-2 |
| • Open the right case | 3-2 |

**A.** Electronic Viewfinder (EVF) Block (Fig. 3-3)

1) Remove two (2) screws.
2) Remove the EVF in the direction of the arrow.

Note: The EVF plate and plate spring are removed on their own when the EVF is removed.

**B.** REC SW/Batt. Removal (Fig. 3-3)

1) Remove two (2) screws.
2) Remove the REC SW/Batt. circuit board in the direction of the arrow.

Note: The lithium battery on the REC SW/Batt. circuit board can be recharged. It cannot be removed from the board.

**C.** T/W SW Unit (Fig. 3-3)

1) Release five (5) tabs.
2) Remove the T/W SW unit in the direction of the arrow.

**D.** Accessory Shoe and DC Light Terminal (Fig. 3-3)

1) Remove two (2) screws.
2) Remove the accessory shoe and DC light terminal in the direction of the arrow.

**E.** Hand Strap (Fig. 3-3)

| Components to remove in advance | Fig No. |
|---|---|
| • REC SW/Batt. circuit Board | 3-3 |

1) Remove two (2) screws.
2) Remove the hand strap from the strap holder on the right case.

**F.** AV Jack Cover and Right Case (Fig. 3-3)

| Components to remove in advance | Fig No. |
|---|---|
| • EVF Block | 3-3 |
| • REC SW/Batt. Circuit Board | 3-3 |
| • T/W SW Unit | 3-3 |
| • Accsseory Shoe and DC Light Terminal | 3-3 |

Note: Remove the EVF block, T/W SW unit, accessory shoe and DC light terminal only when removing the right case.

1) Remove the AV jack cover in the direction of the arrow.



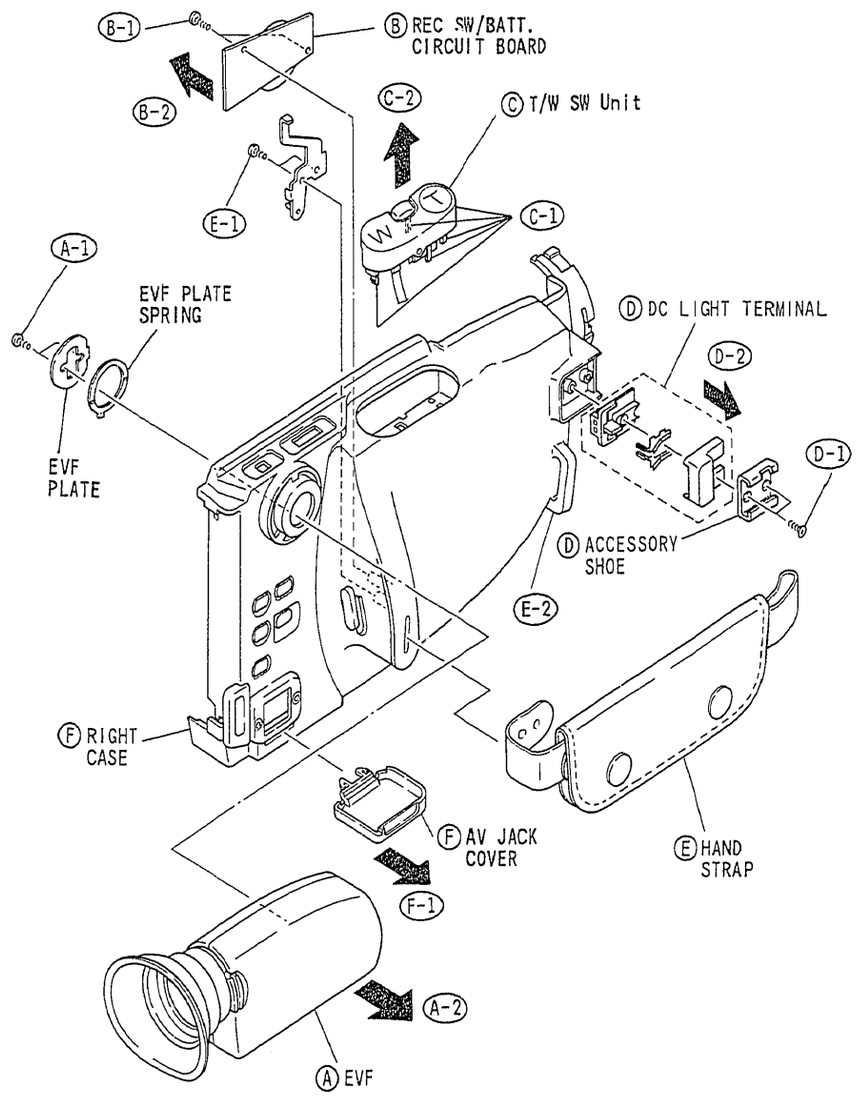



Fig. 3-3

### 3.1.3 Main Block (Main Circuit Board, VCR Frame, Tape Transpoart Mechanism), Camera Block, Microphone (MIC) and Left Case Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Lid | 3-1, 2 |
| • Lens Hood Holder | 3-2 |
| • Top Cover | 3-2 |
| • Open the right case | 3-2 |

**A.** Main Block (Main Circuit Board, VCR Frame, Tape Transpoart Mechanism) (Fig. 3-4)

1) Remove three (3) screws.
2) Remove one (1) screw.
3) Disconnect two (2) connectors and two (2) flat cables.
4) Remove the main block in the direction of the arrow. (The main block (main circuit board) and camera block (sensor circuit board) are connected via a board-in type connector.)

Note: Be careful as the screw plate can be removed easily from the VCR frame when the main block has been removed.

**B.** Camera Block (Fig. 3-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Main Block | 3-4 |

1) Remove three (3) screws.
2) Remove the camera block in the direction of the arrow.

**C.** Microphone (MIC) and Left Case (Fig. 3-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Main Block | 3-4 |

1) Remove one (1) screw.
2) Remove the MIC in the direction of the arrow.

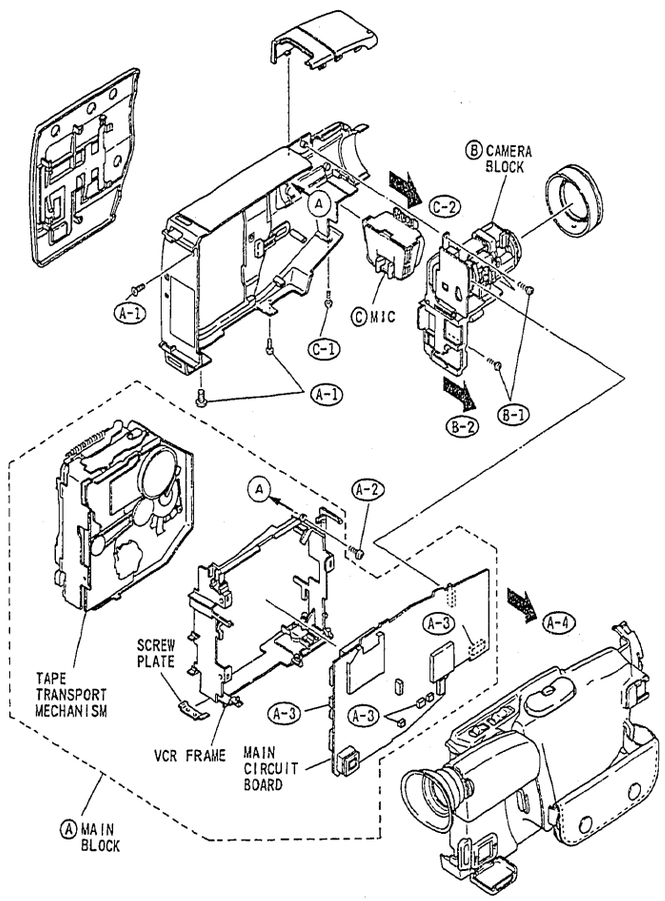



Fig. 3-4



### 3.1.4 Main Circuit Board, VCR Frame and Tape Transport Mechanism Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Lid | 3-1, 2 |
| • Lens Hood Holder | 3-2 |
| • Top Cover | 3-2 |
| • Open the right case | 3-2 |
| • Main Block | 3-4 |

**A.** Main Circuit Board (Fig. 3-5)

1) Disconnect two (2) connectors and four (4) flat cables.
2) Remove one (1) screw.
3) Release four (4) tabs.

**B.** VCR Frame and Tape Transport Mechanism (Fig. 3-5)

| Components to remove in advance | Fig No. |
|---|---|
| • Main Circuit Board | 3-5 |

1) Remove one (1) screw.
2) Release three (3) engaged sections.
3) Remove the VCR frame in the direction of the arrow.

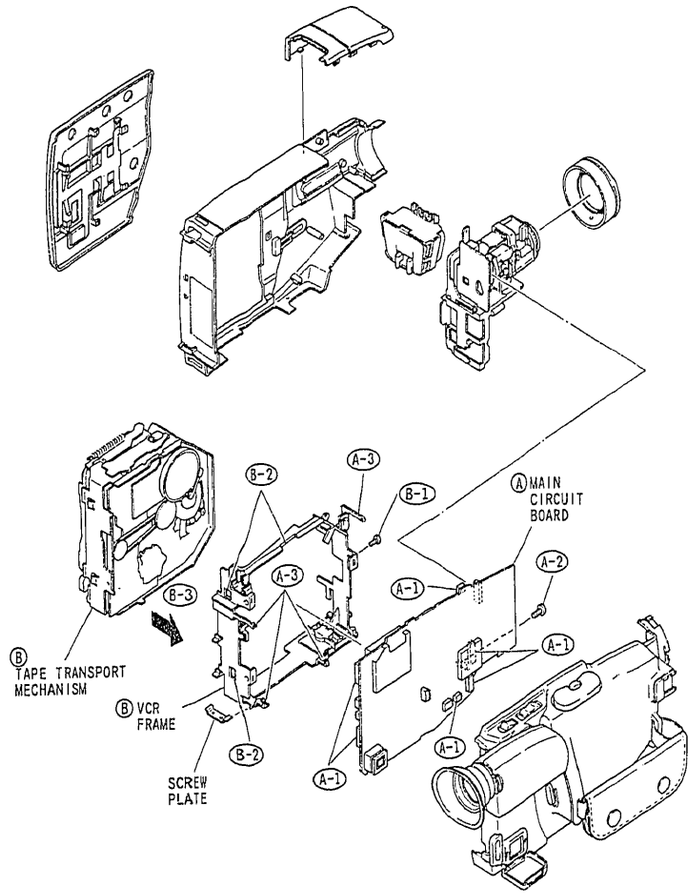



Fig. 3-5

### 3.1.5 H. (Horizontal) Gyro and V. (Vertical) Gyro Circuit Boards, Camera Frame, Wiring/Switch Unit, Lens Block and Sensor Circuit Board Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Lid | 3-1, 2 |
| • Lens Hood Holder | 3-2 |
| • Top Cover | 3-2 |
| • Open the right case | 3-2 |
| • Main Block | 3-4 |
| • Camera Block | 3-4 |

**A.** H. (Horizontal) Gyro Circuit Board (Fig. 3-6)

Note: This item applies only to the products with the EIS (Electronic Image Stabilizer) function.

1) Disconnect one (1) flat cable.
2) Remove one (1) screw.
3) Remove the H. gyro circuit board.

**B.** V. (Vertical) Gyro Circuit Board (Fig. 3-6)

Note: This item applies only to the products with the EIS (Electronic Image Stabilizer) function.

1) Disconnect one (1) flat cable.
2) Remove one (1) screw.
3) Remove the V. gyro circuit board.

**C.** Camera Frame (Fig. 3-6)

| Components to remove in advance | Fig No. |
|---|---|
| • H. Gyro Circuit Board | 3-6 |
| • V. Gyro Circuit Board | 3-6 |

1) Remove three (3) screws.
2) Widen a section of the camera frame that is engaged with the lens slightly and remove the camera frame.

**D.** Wiring/Switch Unit (Fig. 3-6)

| Components to remove in advance | Fig No. |
|---|---|
| • H. Gyro Circuit Board | 3-6 |
| • V. Gyro Circuit Board | 3-6 |
| • Cemera Frame | 3-6 |

Note: This item applies only to the products with the EIS (Electronic Image Stabilizer) function.

1) Remove the wiring/switch unit from the camera frame. (The wiring/switch unit is fixed to the camera frame using double-sided adhesive tape.)

**E.** Lens Block (Fig. 3-6)

| Components to remove in advance | Fig No. |
|---|---|
| • H. Gyro Circuit Board | 3-6 |
| • V. Gyro Circuit Board | 3-6 |
| • Cemera Frame | 3-6 |

1) Remove two (2) screws.
2) Remove the lens block.

**F.** Sensor Circuit Board (Fig. 3-6)

| Components to remove in advance | Fig No. |
|---|---|
| • H. Gyro Circuit Board | 3-6 |
| • V. Gyro Circuit Board | 3-6 |
| • Cemera Frame | 3-6 |
| • Lens Block | 3-6 |

1) Remove two (2) screws.
2) Remove the sensor cover.

Note: When the sensor cover is removed, the crystal filter and sensor rubber are removed on their own. Be careful not to damage the crystal filter.

3) Remove the sensor guide and unsolder sixteen (16) points on the circuit board (terminals of the CCD image sensor).
4) Remove two (2) screws.

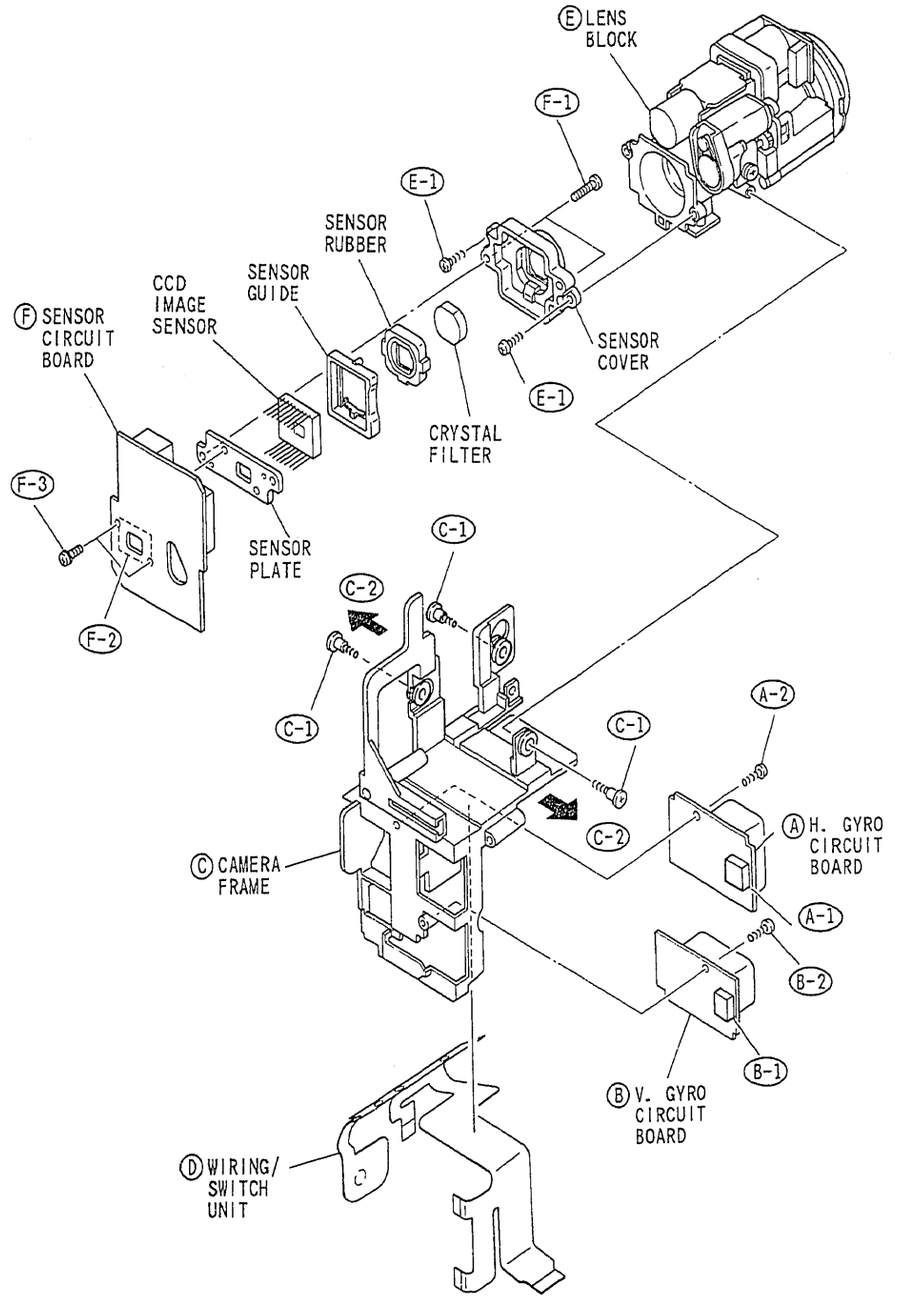



Fig. 3-6

## 3.2 ELECTRONIC VIEWFINDER (EVF) BLOCK

Note: Remove the EVF block in advance.

### 3.2.1 EVF Lens Block, EVF Left Case, EVF Right Case, EVF Circuit Board and CRT Removal

**A.** EVF Lens Block (Fig. 3-7)

1) Turn the EVF lens block in the direction of the arrow.
2) Remove the EVF lens block in the direction of the arrow.

**B.** EVF Left Case (Fig. 3-7)

1) Remove two (2) screws.
2) Remove the left case from the right case in the direction of the arrow.

**C.** EVF Right Case (Fig. 3-7)

| Components to remove in advance | Fig No. |
|---|---|
| • EVF Left Case | 3-7 |

1) Remove the EVF circuit board and CRT from the right case in the direction of the arrow.

**D.** EVF Circuit Board (Fig. 3-7)

| Components to remove in advance | Fig No. |
|---|---|
| • EVF Left Case | 3-7 |
| • EVF Right Case | 3-7 |

1. Disconnect connector and CRT socket.

**E.** CRT (Fig. 3-7)

| Components to remove in advance | Fig No. |
|---|---|
| • EVF Left Case | 3-7 |
| • EVF Right Case | 3-7 |
| • EVF Circuit Board | 3-7 |

1) Release two (2) tabs.

Note: When the CRT top and bottom covers are removed, the clear cover is removed on its own. Be careful not to damage the clear cover.

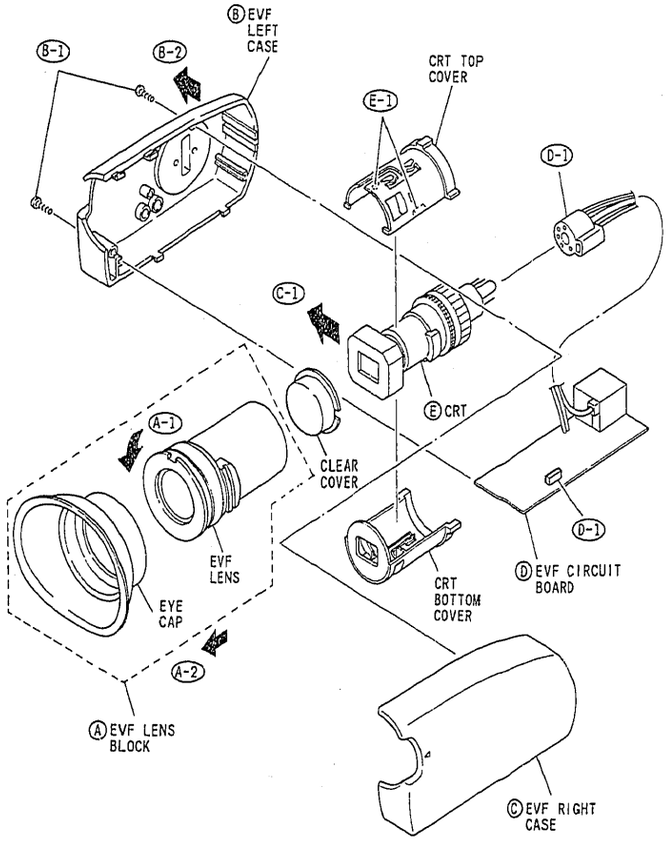



Fig. 3-7



## 3.3 LENS BLOCK

Note: Remove the lens block in advance.

### 3.3.1 Focus Motor, Zoom Motor, Iris Block, Position Sensor and Lens Flat Cable Removal

Note: Be careful not to damage the lens flat cable.

**A.** Focus Motor (Fig. 3-8)

1) Unsolder four (4) points.
2) Remove two (4) screws.
3) Remove the focus motor from the lens.

**B.** Zoom Motor (Fig. 3-8)

1) Remove one (1) screw.
2) Unsolder two (2) points.

**C.** Iris Block (Fig. 3-8)

1) Disconnect one (1) flat cable.
2) Remove one (1) screw.
3) Remove the iris block in the direction of the arrow.

Note: Be careful not to damage the iris blades. Also take care that foreign matter such as dust, etc. does not adhere to the iris blades.

**D.** Position Sensor (Fig. 3-8)

1) Remove one (1) screw.
2) Unsolder two (2) points.

**E.** Lens Flat Cable (Fig. 3-8)

| Components to remove in advance | Fig No. |
|---|---|
| • Focus Motor | 3-8 |
| • Zoom Motor | 3-8 |
| • Position Sensor | 3-8 |

1) Disconnect one (1) flat cable.

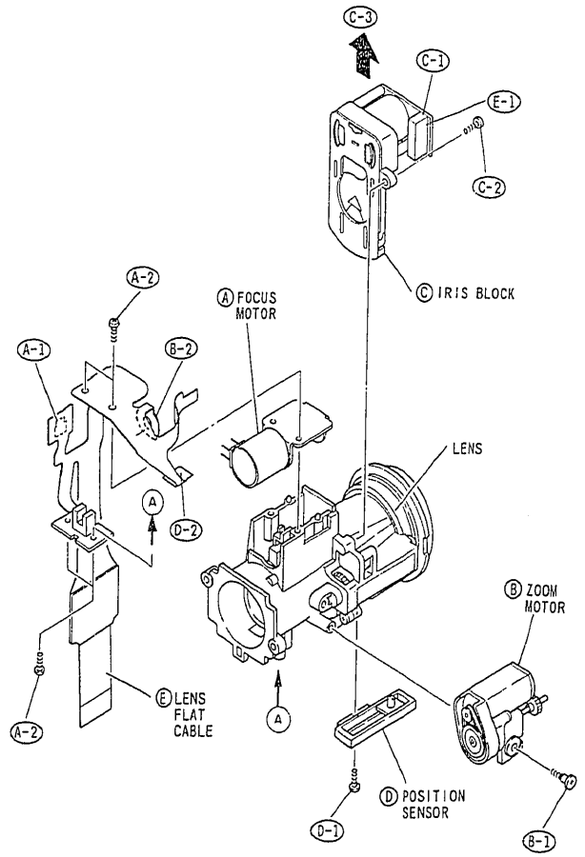



Fig. 3-8

## 4. TAPE TRANSPORT MECHANISM DISASSEMBLY

Note 1: Remove the tape transport mechanism in advance.
Note 2: Dismantle and reinstall the tape transport mechanism in the unloading/stop mode.

### 4.1 Cassette Holder, Motors, Sensors and Circuit Boards

#### 4.1.1 Cassette Holder, Static Discharge Brush, Cylinder, Loading Motor, Loading Gears (1) and (2), Capstan Motor and Tape Cover Removal

**A.** Cassette Holder (Fig. 4-2)

1) Move the eject lever in the direction of the arrow and set the unit to the eject state.
2) Remove four (4) screws.

Note: Reinstall the cassette holder so that section (b) of the eject lock slider is inserted into section (a) of the eject lock arm.

**B.** Static Discharge Brush (Fig. 4-2)

1) Remove one (1) screw.

**C.** Cylinder (Fig. 4-2)

1) Remove two (2) screws.
2) Remove the cylinder in the direction of the arrow.

Note 1: Take care as the spring can be removed on its own when screw (c) holding the cylinder is removed.
Note 2: Do not touch video head tips with your fingers or tools, etc. during work.
Note 3: After reinstalling the cylinder, be sure to perform the following adjustment.
- 5. ADJUSTMENTS AFTER REPLACING THE CYLINDER in CHAPTER 3

**D.** Loading Motor, Loading Gears (1) and (2) (Fig. 4-2)

Note: Although the loading motor can be removed with the cassette holder attached, it is better to remove the holder to make the work easier.

1) Remove two (2) screws.
2) Remove the loading motor and loading gears (1) and (2) in the direction of the arrow.

Note: Perform the following adjustments after reinstalling the loading motor and loading gears (1) and (2).
- 3. PHASE MATCHING ASSEMBLY in CHAPTER 3

**E.** Capstan Motor (Figs. 4-1, 4-2)

| Components to remove in advance | Fig No. |
|---|---|
| • Loading Motor and Loading Gears (1) and (2) | 4-2 |

1) Remove three (3) screws. (See Fig. 4-2)
2) Release three (3) tabs. (See Fig. 4-1)
3) Remove the capstan motor in the direction of the arrow.

**F.** Tape Cover (Fig. 4-2)

1) Release two (2) tabs.

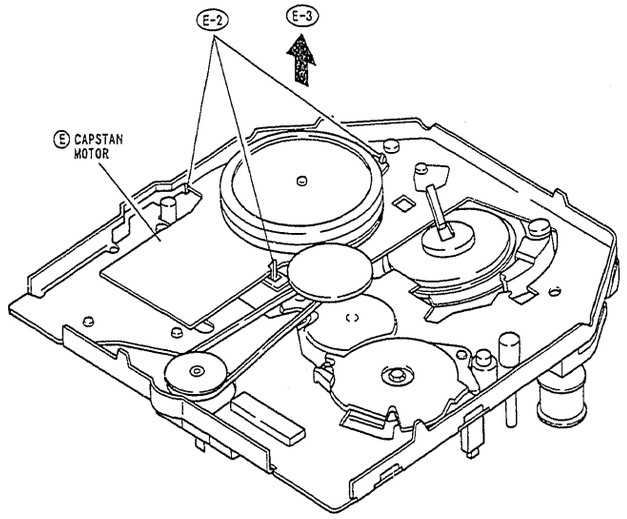



Fig. 4-1



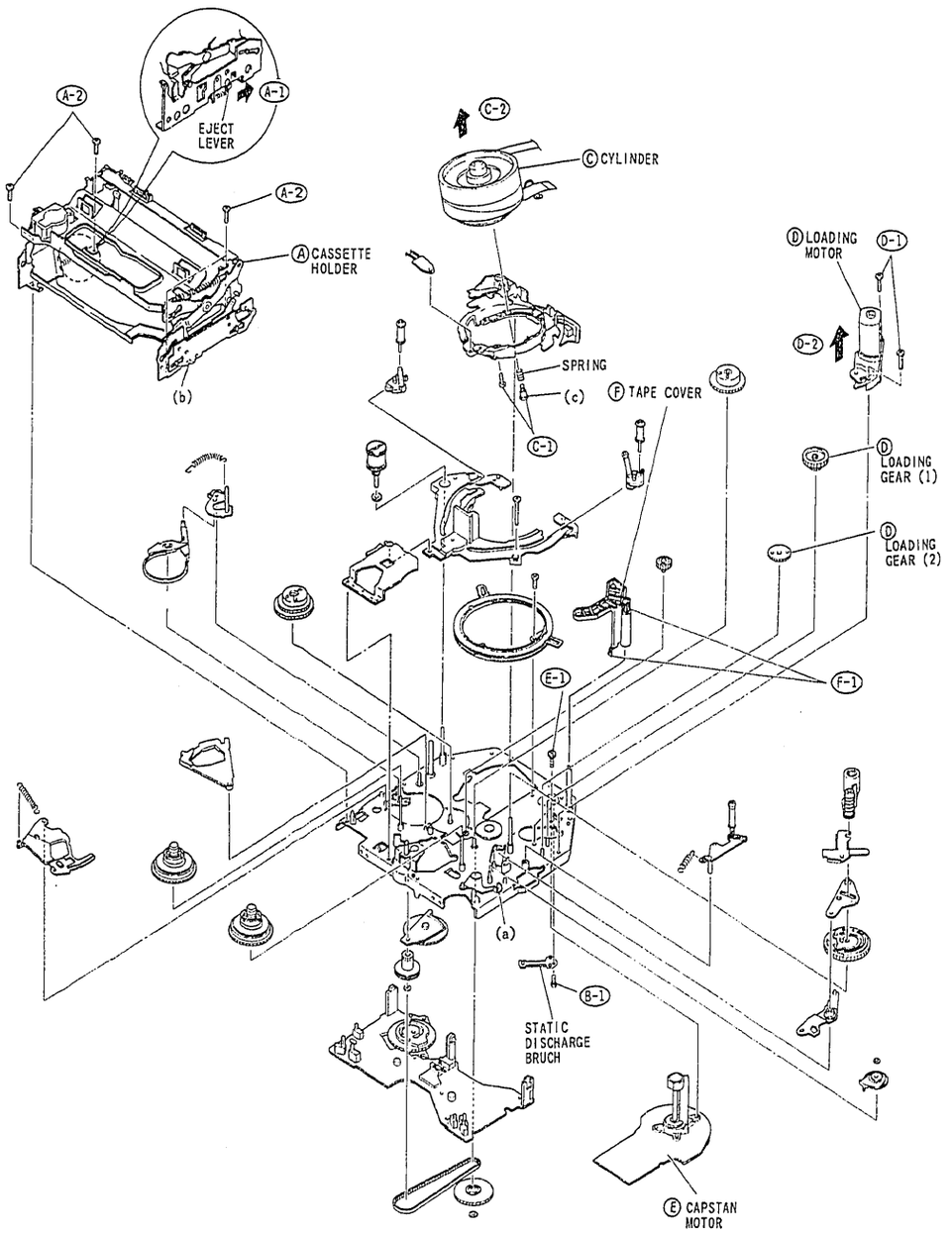



Fig. 4-2

### 4.1.2 Pulley Gear, Center Gear, Capstan Belt, Trouble Sensor Circuit Board, Dew Sensor, Pressure Roller, Pull-Out Pole, Pressure Roller Drive Arm, Pressure Roller Cam Gear and Take-up Reel Brake Removal

**A.** Pulley Gear, Center Gear and Capstan Belt (Fig. 4-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Loading Motor and Loading Gears (1) and (2) | 4-2 |
| • Capstan Motor | 4-1,2 |

1) Remove one (1) washer.
2) Remove one (1) washer.
3) Remove the center gear and pulley gear together with the capstan belt.

**B.** Trouble Sensor Circuit Board (Fig. 4-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Loading Motor and Loading Gears (1) and (2) | 4-2 |
| • Capstan Motor | 4-1,2 |
| • Pulley Gear, Center Gear and Capstan Belt | 4-4 |

Note: The following sensors and switches are installed on the Trouble Sensor circuit board.
- End LED
- Supply and Take-up End Sensors
- Supply and Take-up Reel Sensors
- Safety Tab Switch
- Tape Select Switch
- Hi-8 Tape Switch
- Cassette Holder Switch
- Mechanism State Switch

1) Remove the five (5) screws.

Note: Perform the following adjustments after reinstalling the Trouble Sensor circuit board.
- 3. PHASE MATCHING ASSEMBLY in CHAPTER 3

**C.** Dew Sensor (Fig. 4-4)

Note: Although the dew sensor can be removed with the cassette holder attached (in the eject state), it is better to remove the holder to make the work easier.

1) Remove one (1) screw.

**D.** Pressure Roller (Fig. 4-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Holder | 4-2 |

1) Remove one (1) washer.
2) Pull out the pressure roller from the pressure roller shaft.

Note 1: Reinstall the pressure roller so that pin (a) of the pressure roller drive arm is inserted into groove (b) in the pressure roller.

Note 2: Do not remove the spring of the pressure roller.

**E.** Pull-Out Pole, Pressure Roller Drive Arm and Pressure Roller Cam Gear (Figs. 4-3, 4-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Holder | 4-2 |
| • Pressure Roller | 4-4 |

1) Remove one (1) screw. (See Fig. 4-4)
2) Move the pressure roller plate in the direction of the arrow and remove the pressure roller plate.
3) Remove the spring.

Note 1: Reinstall the pull-out pole so that pin (a) of this pole is inserted into groove (b) in the surface of the pressure roller cam gear. (See Figs. 4-3, 4-4)

Note 2: Reinstall the pressure roller drive arm so that pin (c) of this arm is inserted into groove (d) in the surface of the pressure roller cam gear. (See Figs. 4-3, 4-4)

Note 3: Reinstall the pressure roller cam gear so that pin (e) of the cassette holder lock arm is inserted into groove (f) on the back of the pressure roller cam gear. (See Figs. 4-3, 4-4)

**F.** Take-up Reel Brake (Fig. 4-4)

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Holder | 4-2 |

1) Remove one (1) washer.

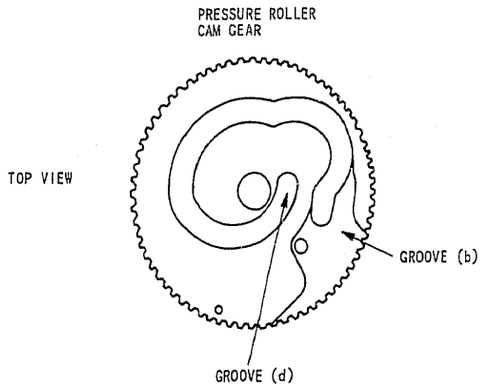



Fig. 4-3



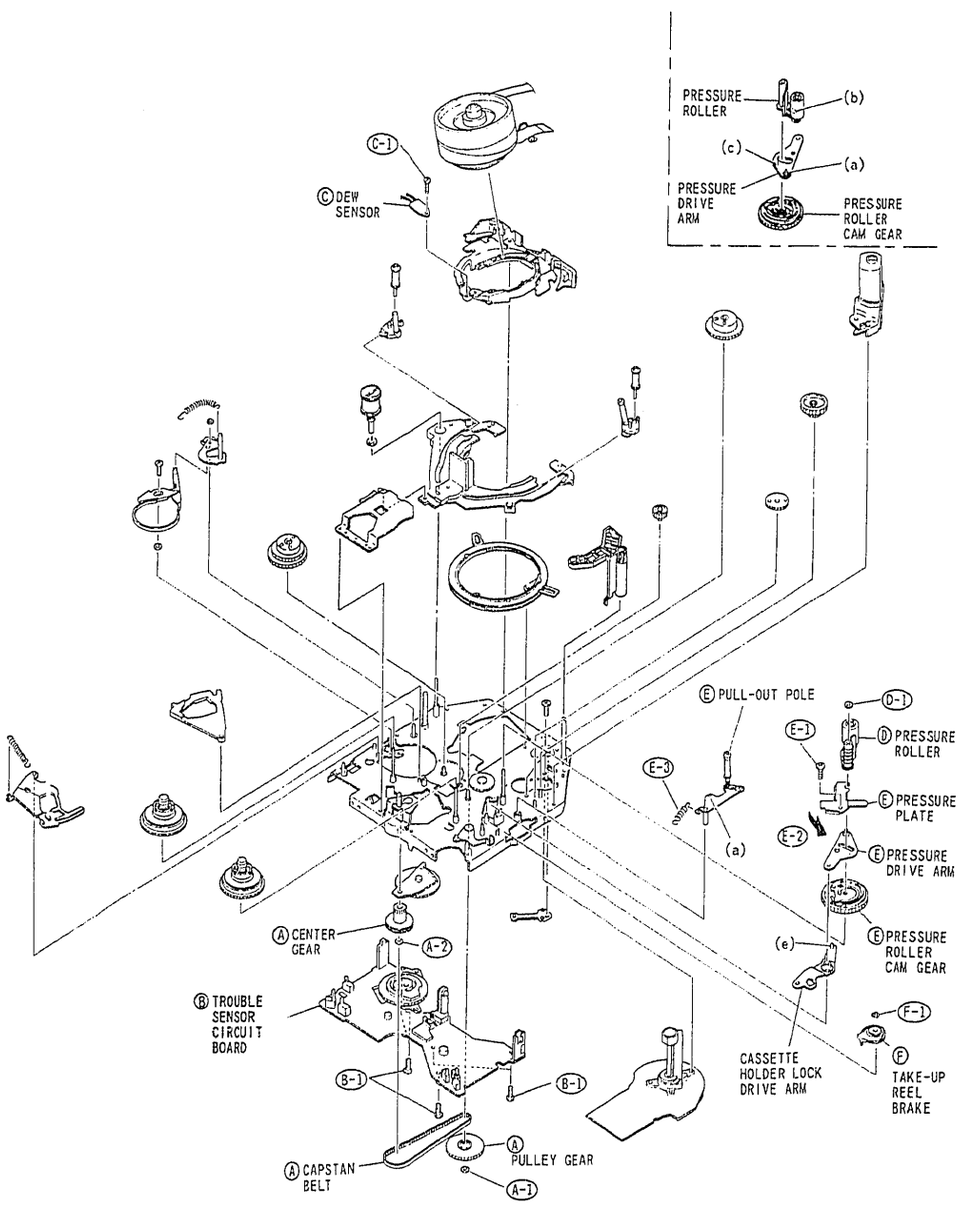



Fig. 4-4

## 4.2 Others Parts

### 4.2.1 Supply Guide Roller, Take-up Guide Roller, Impedance Roller, Chassis Plate and Take-up Reel Disk Removal

Components to remove in advance — Fig No.
- Cassette Holder — 4-2

**A.** Supply Guide Roller (Fig. 4-5)

1) Loosen one (1) screw.
2) Use the special screwdriver (to adjust the guide roller) to turn the top of the supply guide roller counterclockwise.

Note: Perform the following adjustment after reinstalling the supply guide roller.
- 4.4 Supply/Take-up Guide Roller Height Adjustment

**B.** Take-up Guide Roller (Fig. 4-5)

1) Loosen one (1) screw.
2) Use the special screwdriver (to adjust the guide roller) to turn the top of the take-up guide roller counterclockwise.

Note: Perform the following adjustment after reinstalling the take-up guide roller.
- 4.4 Supply/Take-up Guide Roller Height Adjustment

**C.** Impedance Roller (Fig. 4-5)

1) Use a flat-bladed screwdriver to turn the top of the impedance roller counterclockwise to remove it.

Note: Perform the following adjustment after reinstalling the impedance roller.
- 4.3 Pull-out Pole and Impedance Roller Height Check/Adjustment

**D.** Chassis Plate (Fig. 4-5)

1. Remove three (3) screws.

**E.** Take-up Reel Disk (Fig. 4-5)

Components to remove in advance — Fig No.
- Chassis Plate — 4-5

1) Pull out the take-up reel disk from the take-up reel disk shaft.

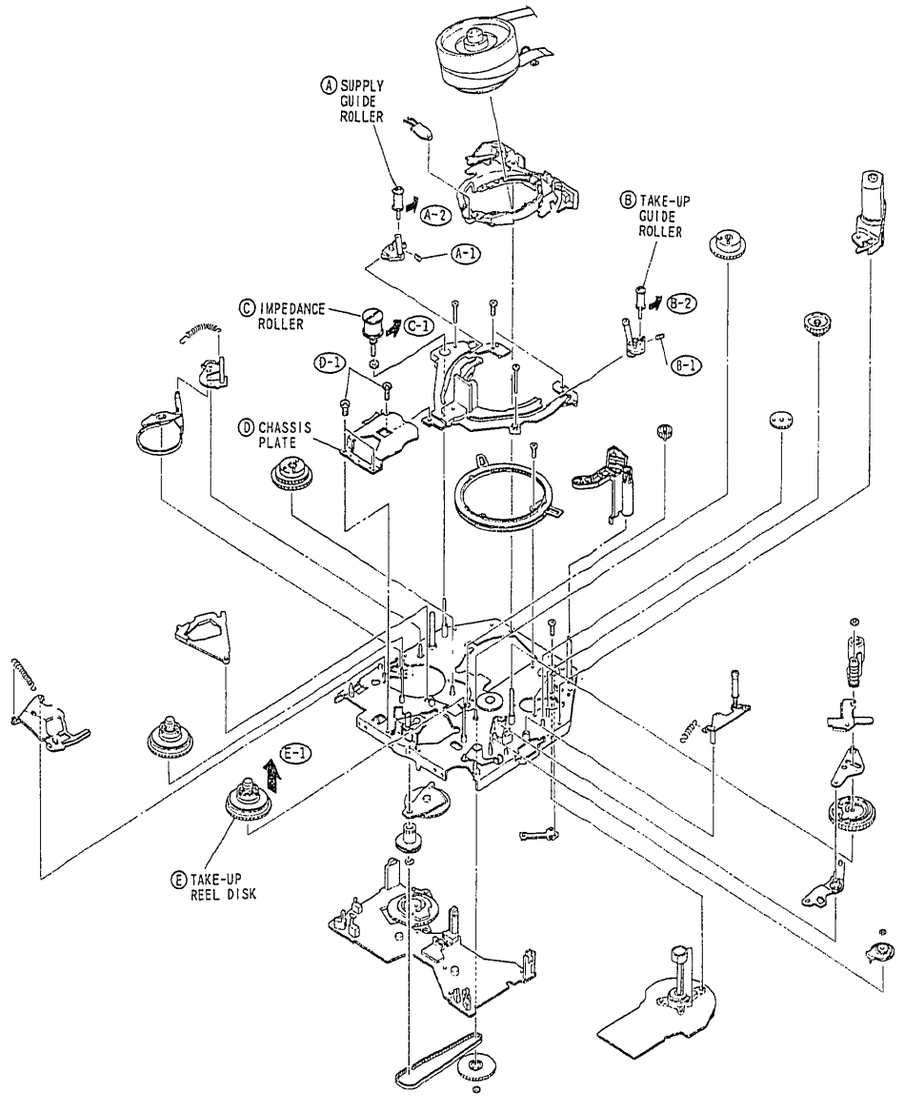



Fig. 4-5

### 4.2.2 Eject Lock Drive Arm, Tension Arm, Tension Band, Supply Reel Disk, Eject Arm, Supply Reel Brake Reel Drive Idler and Cylinder Base Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Holder | 4-2 |

**A.** Eject Lock Drive Arm (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Pressure Roller | 4-4 |
| • Pull-out Pole, Pressure Roller Drive Arm and Pressure Roller Cam Gear | 4-4 |
| • Take-up Reel Brake | 4-4 |
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |

1) Remove the eject lock drive arm from the eject lock arm. (See Fig. 4-6)

Note: Reinstall the eject lock drive arm so that pin (b) of the eject lock arm is inserted into hole (a) in the eject lock drive arm.

**B.** Tension Arm and Tension Band (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |

1) Remove the tension spring from the chassis and tension arm.
2) Remove one (1) screw.
3) Remove one (1) washer.
4) Release two (2) tabs and remove the tension band from the tension arm.

Note: Perform the following adjustment after reinstalling the tension arm and tension band.
- 4.1 Tension Pole Position/Tension Torque Adjustments

**C.** Supply Reel Disk and Eject Arm (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |
| • Tension Arm and Tension Band | 4-6 |

1) Pull out the supply reel disk from the supply reel disk shaft.
2) Remove the eject arm.

Note: Reinstall the eject arm so that pin (c) of the arm is inserted into groove (d) in the mechanism state switch.

**D.** Supply Reel Brake (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |
| • Tension Arm and Tension Band | 4-6 |

1) Remove the spring between the supply reel brake and chassis.
2) Remove the supply reel brake.

**E.** Reel Drive Idler (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Loading Motor and Loading Gears (1) and (2) | 4-2 |
| • Capstan Motor | 4-2 |
| • Pulley Gear, Center Gear and Capstan Belt | 4-4 |
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |
| • Tension Arm and Tension Band | 4-6 |
| • Supply Reel Disk and Eject Arm | 4-6 |
| • Supply Reel Brake | 4-6 |

1) Remove the reel drive idler in the direction of the arrow.

Note: When removing the reel drive idler, take care not to lose the washer between the idler and chassis.

**F.** Cylinder Base (Fig. 4-6)

| Components to remove in advance | Fig No. |
|---|---|
| • Static Discharge Brush | 4-2 |
| • Cylinder | 4-2 |
| • Tape Cover | 4-2 |
| • Dew Sensor | 4-4 |

1) Remove three (3) screws.

Note: The cylinder base can be removed from the chassis with the cylinder attached.

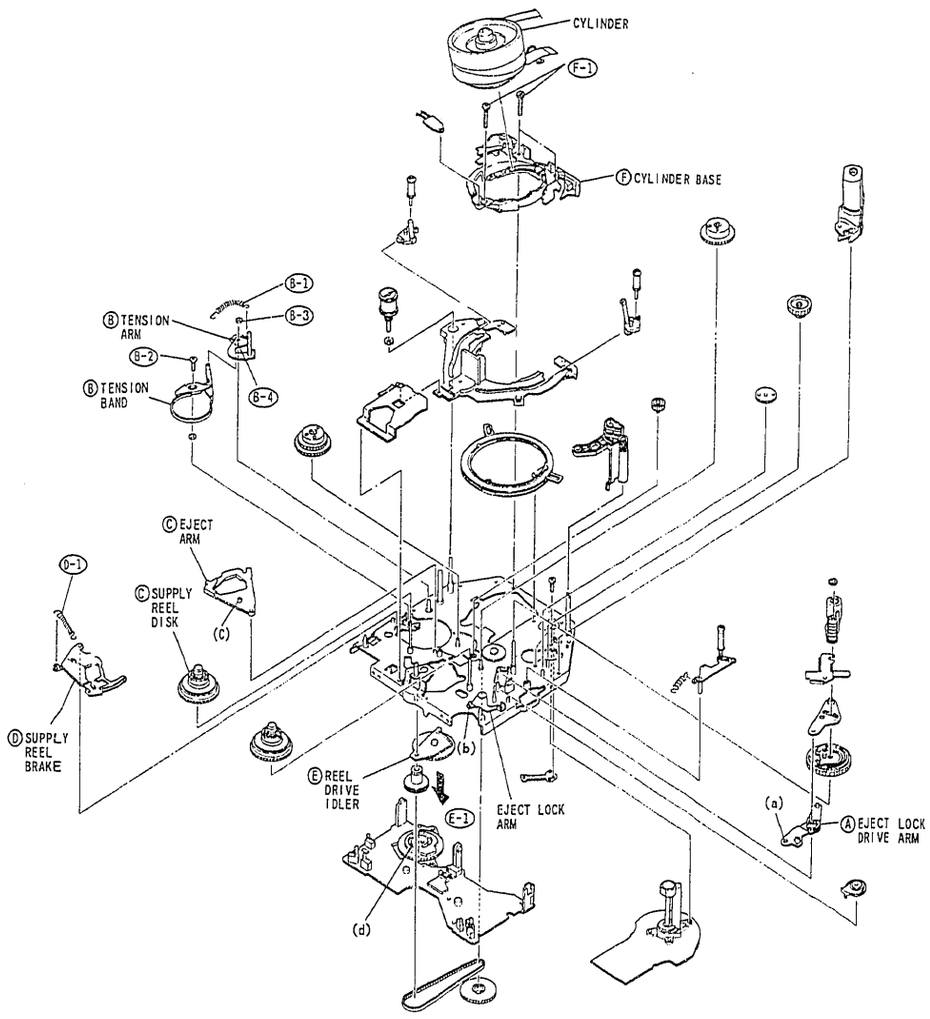



Fig. 4-6

### 4.2.3 Guide Roller Rail, Supply and Take-up Guide Roller Bases, Loading Relay Gears (1), (2), Take-up and Supply Loading Rings and Loading Relay Gear (3) Removal

| Components to remove in advance | Fig No. |
|---|---|
| • Cassette Holder | 4-2 |
| • Tape Cover | 4-2 |
| • Dew Sensor | 4-4 |
| • Pressure Roller | 4-4 |
| • Supply Guide Roller | 4-5 |
| • Take-up Guide Roller | 4-5 |
| • Impedance Roller | 4-5 |
| • Chassis Plate | 4-5 |
| • Take-up Reel Disk | 4-5 |
| • Tension Arm and Tension Band | 4-6 |
| • Cylinder Base (with the cylinder attached) | 4-6 |

Note 1: It is not necessary to remove the supply and take-up guide rollers when removing only the guide roller rail or when removing the guide roller bases with the guide rollers assembled.
Note 2: The cylinder base can be removed from the chassis with the cylinder attached.

**A.** Guide Roller Rail (Fig. 4-7)

1) Remove two (2) screws.
2) Remove the guide roller rail and guide roller bases from the chassis.

Note: Perform the following adjustment after reinstalling the guide roller rail.
·4.4 Supply/Take-up Guide Roller Height Adjustment

**B.** Supply Guide Roller Base (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove the supply guide roller base along the groove in the rail in the direction of the arrow.

Note: Perform the following adjustment after reinstalling the supply guide roller base.
·4.4 Supply/Take-up Guide Roller Height Adjustment

**C.** Take-up Guide Roller Base (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove the take-up guide roller base along the groove in the rail in the direction of the arrow.

Note: Perform the following adjustment after reinstalling the take-up guide roller base.
·4.4 Supply/Take-up Guide Roller Height Adjustment

**D.** Loading Relay Gear (1) (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove one (1) washer.

Note: Perform the following adjustment after reinstalling loading relay gear (1).
·3. PHASE MATCHING IN ASSEMBLY in CHAPTER 3.

**E.** Loading Relay Gear (2) (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove loading relay gear (2) from the chassis.

Note: Perform the following adjustment after reinstalling loading relay gear (2).
·3. PHASE MATCHING IN ASSEMBLY in CHAPTER 3.

**F.** Loading Ring (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove one (1) screw.

Note: Perform the following adjustment after reinstalling the loading ring.
·3. PHASE MATCHING IN ASSEMBLY in CHAPTER 3.

**G.** Loading Relay Gear (3) (Fig. 4-7)

| Components to remove in advance | Fig No. |
|---|---|
| • Guide Roller Rail | 4-7 |

1) Remove loading relay gear (3) from the chassis.

Note: Perform the following adjustment after reinstalling loading relay gear (3).
·3. PHASE MATCHING IN ASSEMBLY in CHAPTER 3.

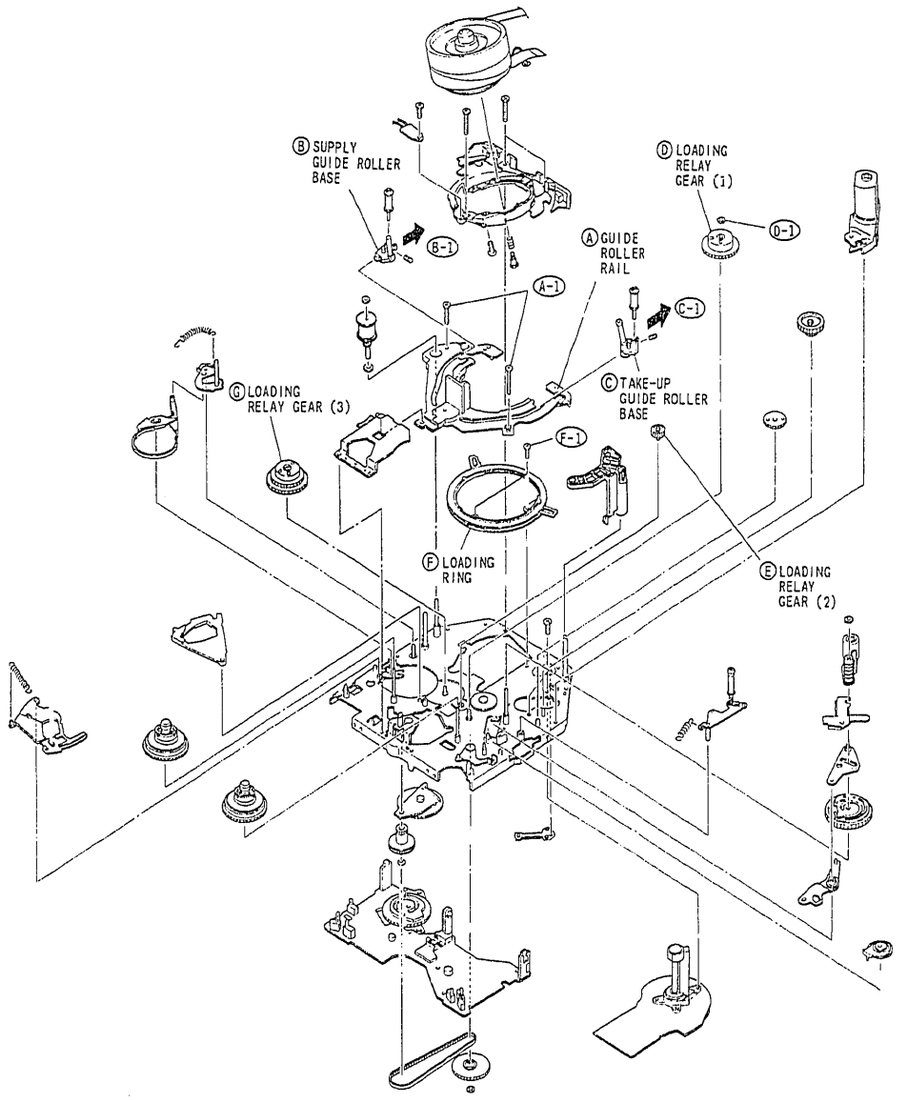
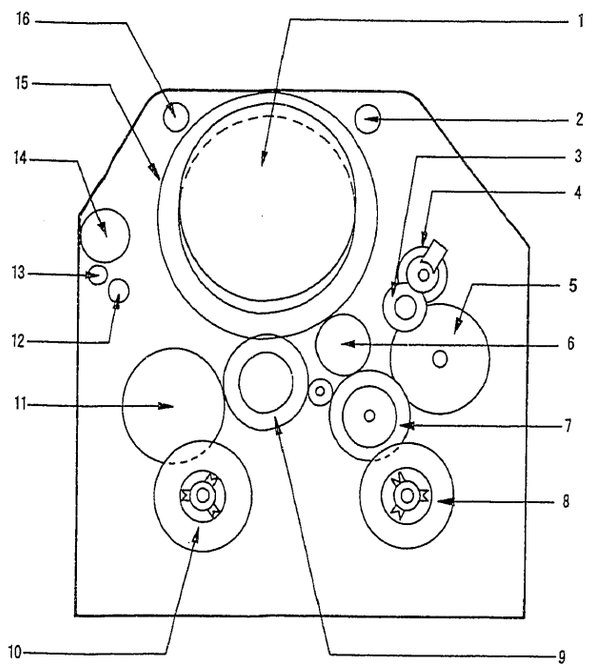



Fig. 4-7

# CHAPTER 3

## MECHANISM ADJUSTMENT

### 1. MAJOR MECHANICAL COMPONENTS




1. Cylinder
2. Take-up Guide Roller
3. Pressure Roller
4. Capstan Motor
5. Loading Cam Gear
6. Loading Relay Gear (4)
7. Loading Relay Gear (1)
8. Take-up Reel Disk
9. Loading Relay Gear (3)
10. Supply Reel Disk
11. Mechanism State Switch
12. Supply Guide Post
13. Tension Pole
14. Impedance Roller
15. Loading Ring
16. Supply Guide Roller

Fig. 1-1 Tape Transport Mechanism (Top View)

### 2. BEFORE STARTING ADJUSTMENT

- Be sure to set the camera/recorder to the unloading/stop mode when dismantling the tape transport block.
- Do not re-use washers once they have been removed.
- Remove the components shown below beforehand, referring to CAPTER 2 DISASSEMBLY.

| Components to remove in advance | Fig. No |
|---|---|
| · Lens Hood Holder | 3-2 |
| · Top Cover | 3-2 |
| · Open the Right Case | 3-2 |
| · Main Block | 3-4 |
| · Main Circuit Board | 3-5 |
| · VCR Frame and Tape Transport Mechanism | 3-5 |

- With this camera/recorder, mechanical adjustments (tape transport system check/adjustment) can be done with the unassembled VCR block (without connecting the camera block).
- To set the camera/recorder to the playback mode without loading a cassette, shut off the light striking the end LEDs in the chassis and press the playback button. (Shut off the light striking the end LEDs in the eject state.)



### 3. PHASE MATCHING IN ASSEMBLY

Caution 1: Here, the phases of all components are aligned in the unloading/stop mode. Be sure to set the camera/recorder to the unloading/stop mode before dismantling the tape transport block.
Caution 2: Be sure to check and adjust when reinstalling the mechanism state switch, loading motor, gears and loading ring.

#### 3.1 Mechanism State Switch [Mecha. State Sw] (Fig. 3-1)

●Procedure of phase matching in assembly
1) Align mark (A) and mark (a) on the mecha. state sw and mecha. state sw case.

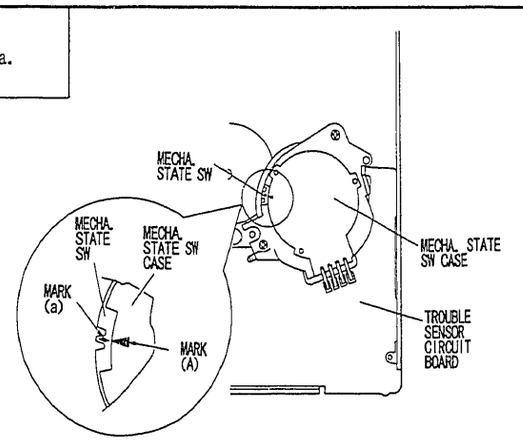



Fig. 3-1

#### 3.2 Loading Gears and Loading Ring (Figs. 3-2, 3-3)

Caution: Be careful that the phase of the mechanism state switch which was matched in item 3-1 does not drift.

●Procedure of phase matching in assembly
1) Align the markings of the loading ring and gears as shown in Fig. 3-2.
Caution: When reinstalling the pressure roller cam gear, set the eject lock arm to the position shown in Fig. 3-3 and check that pin (K) is inserted in groove (k) in the back of the pressure roller cam gear.
Advice: If it is difficult to see marking (E) on the lower loading ring, match the phase by the following procedure.
① Set the upper and lower loading rings to the state shown in Fig. 3-2. (Watch the guide roller fixing section.)
② Move the upper and lower loading rings so that holes (I) overlap each other.
③ If holes (I) overlap each other, the phase of the loading ring is correct.

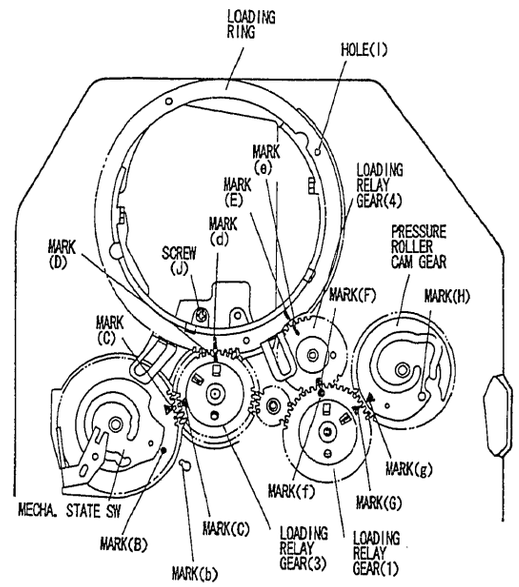



Fig. 3-2

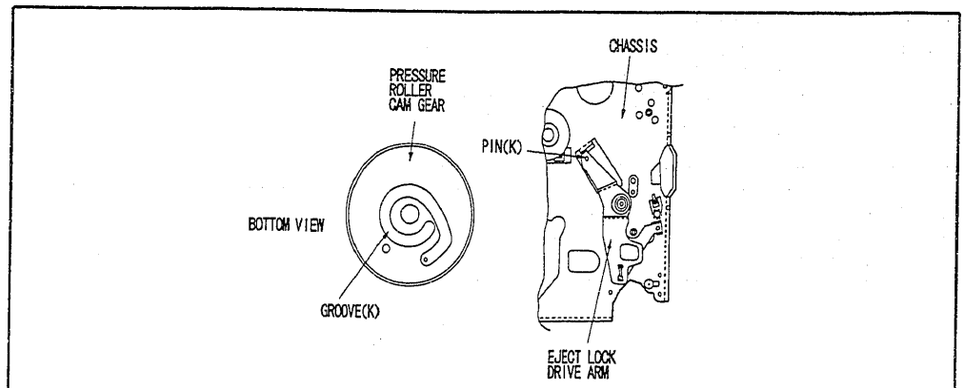



Fig. 3-3

## 4. TAPE TRANSPORT SYSTEM CHECK/ADJUSTMENT

The tape transport system is a generic term for the path from the supply reel disk to the take-up reel disk via the cylinder. The tape transport components, especially the components which come into direct contact with the tape, should be kept clean without damage, dust or oil, etc. adhering to the contact surfaces. The tape transport system is adjusted before shipment from the factory, so perform adjustments only when components of the transport system are replaced or adjustments of the transport system have drifted.

### 4.1 Tension Pole Position/Tension Torque Adjustments (Fig. 4-1)

Caution: Be sure to perform these adjustments after reinstalling the tension arm, tension band and tension spring.

| Test equipment/jigs | Test equipment/jigs connection points | State of VCR | Adjustment point |
|---|---|---|---|
| | | • Shut off the light striking the end LEDs and set to the playback mode without loading a cassette | • Tension band holder |
| • Cassette torque meter (SRK-8T-112) | • Load a cassette torque meter | • Set to the playback mode. | • Tension spring |

**Adjustment procedure**

**Tension pole position adjustment (Fig. 4-1)**

1) Hook the tension spring to position (B) of the supring holder.
2) Loosen screw (D) holding tension band holder (E).
3) Adjust the position of tension band holder (E) so the relationship between the hole in the tension arm and guide roller rail is as shown in Fig. 4-1.
4) Tighten screw (D).
5) Perform playback and stop several times and check that the specification in step 3) is satisfied. If it is not satisfied, re-adjust the tension pole position.

**Tension torque adjustment (Fig. 4-1)**

1) Hook the tension spring to position (B) of the supring holder.
2) Set the tension torque on the supply side to 4.5 - 5.5 g-cm.
   If it is more than 5.6 g-cm: Move the tension spring to position (A) of the spring holder.
   If it is less tha 4.4 g-cm: Move the tension spring to position (C) of the spring holder.

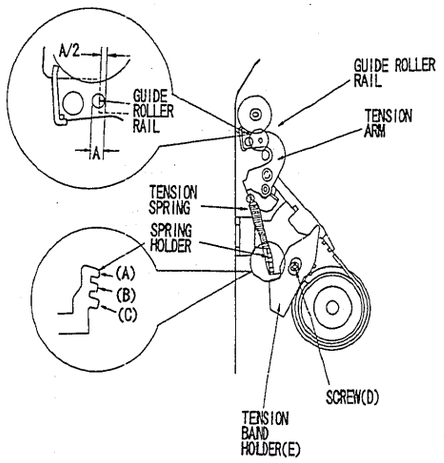



Fig. 4-1



### 4.2 Pull-out Pole and Impedance Roller Height Check/Adjustment (Figs. 4-2, 4-3)

Caution: Be sure to check this item after reinstalling the pull-out arm and impedance roller.
Basically, the pull-out pole height should not be adjusted.
Adjust the pull-out height only if it is abnormal.

| Test equipment/jigs | Test equipment/jigs connection points | State of VCR | Adjustment point |
|---|---|---|---|
| • Blank tape (P6-120)<br>• Special driver | | • Load a blank tape and set to the playback mode. | • Top of pull-out pole |

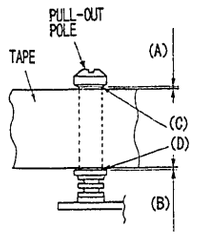
**Checking/adjustment procedure**

**Pull-out Pole**

1) Check that the tape is running at the center of the pull-out arm. If it is not, adjust the height of the arm.
2) Set to the reverse search mode.
3) Check that the tape is running between (C) and (D) and also no curling or creasing occurs.
4) If step 3) cannot be confirmed, fine adjust the height of the pull-out arm.

**Impedance Roller**

1) Check that there is no curling or creasing of the tape occurs around the impedance roller. If curling or creasing occurs, check the installation of the impedance roller.




(A) = (B)

Fig. 4-2

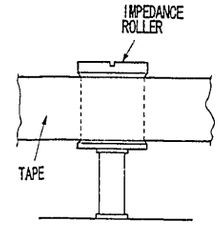



Fig. 4-3

### 4.3 Supply/Take-up Guide Roller Height Adjustment (Figs. 4-4, 4-5)

Caution: Be sure to check this item after reinstalling the supply guide roller and take-up guide roller.
Basically, the height of the supply/take-upguide rollers should not be adjusted.
Adjust these heights only if they are abnormal.

| Test equipment/jigs | Test equipment/jigs connection points | State of VCR | Adjustment point |
|---|---|---|---|
| • Alignment tape<br>• Oscilloscope<br>• ATF-R jig<br>• Special driver | • PG601 on Main board<br>• TP1 (SW30) on ATF-R jig<br>• TP2 (GND) on ATF-R jig<br>• TP3 (FM OUT) on ATF-R jig | • Connect the ATF-R jig to PG601.<br>• ATF-R jig (SW1: OFF, SW3: ON, RT1: mechanical center) | • Top of guide rollers |

**Adjustment procedure**

Caution: Before performing this adjustment, refer to Fig. 7-1 and modify the ATF-R jig. Connect the ATF-R jig before supplying power.

1) Connect an oscilloscope to TP3 on the ATF-R jig.
2) Synchronize the oscilloscope with TP1 (SW30) on the ATF-R jig.
3) Set the osilloscope to (+) slope.
4) Load an alignment tape that has been completely rewound and set to the playback mode.

**Take-up Guide Roller**

5) Press SW2 on the ATF-R jig and hold it, then perform the fllowing steps.
6) Adjust the height of the take-up guide roller so the waveform is flat.
7) Set SW1 on the ATF-R jig to ON.
8) Turn RT1 on the ATF-R jig and check that the waveform always changes while being flat.
9) If step 8) cannot be confirmed, adjust the height of the guide roller precisely so the specifications in step 8) are satisfied.

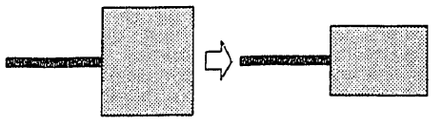


Fig. 4-4

◆Supply Guide Roller

10) Set the oscilloscope to (-) slope.
11) Turn RT1 on the ATF-R jig so the waveform is shaped as shown in Fig. 4-5.
12) Adjust the voltage level control of the oscilloscope so that portion (A) of the waveform is set to 3 graduations.
13) Adjust the height of the supply guide roller so the minimum amplitude of the waveform is set to 2.5 ± 0.3 graduations.

Caution: After adjustment is completed, be sure to reverse the modification to ATF-R jig.

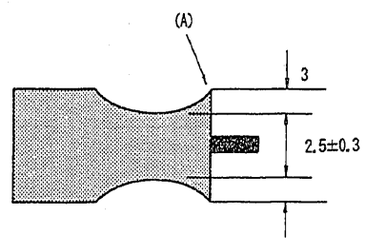



Fig. 4-5

## 5. ADJUSTMENT AFTER REPLACING THE CYLINDER (Figs. 5-1, 5-2)

When the cylinder is replaced, the height relative to the guide roller drifts, therefore the tape transport system and servo circuit should be adjusted. Check and adjust in the following order.

| Test equipment/jigs | Test equipment/jigs connection points | State of VCR | Adjustment point |
|---|---|---|---|
| · Alignment tape<br>· Oscilloscope<br>· ATF-R jig<br>· Special driver | · PG601 on Main board<br>· TP1 (SW30) on ATF-R jig<br>· TP2 (GND) on ATF-R jig<br>· TP3 (FM OUT) on ATF-R jig | · Connect the ATF-R jig to PG601.<br>· ATF-R jig (SW1: OFF, SW3: ON, RT1: mechanical center) | · Top of guide rollers |

●Adjustment procedure

Caution: Before performing this adjustment, refer to Fig. 7-1 and modift the ATF-R jig. Connect the ATF-R jig before supplying power.

1) Connect an oscilloscope to TP3 on the ATF-R jig.
2) Synchronize the oscilloscope with TP1 (SW30) on the ATF-R jig.
3) Set the oscilloscope to (+) slope.
4) Load an alignment tape that has been completely rewound and set to the playback mode.
5) Press SW2 on the ATF-R jig and hold it, then perform the following steps.
6) Set SW1 on the ATF-R jig to ON.
7) Turn RT1 on the ATF-R jig and check that the waveform always changes while being flat. (See Fig. 5-1) If this cannot be confirmed, adjust the height of the take-up guide roller, referring to "4.4 Supply/Take-up Guide Roller Height Adjustment".
8) Set the oscilloscope (-) slope.
9) Turn RT1 on the ATF-R jig so the waveform is shaped as shown in Fig. 5-2.
10) Adjust the voltage level control of the oscilloscope so that position (A) of the waveform is set to 3 graduations.
11) Check that the minimum amplitude of the waveform is set to 2.5 ± 0.3 graduations. If this cannot be confirmed, adjust the height of the supply guide roller, referring to "4.4 Supply/Take-up Guide Roller Height Adjustment".
12) Perform the following electrical adjustments, referring to CHAPTER 4.
    · Head switching point
    · Record luminance/chroma level adjustment

Caution: After adjustment is completed, be sure to reverse the modification to ATF-R jig.

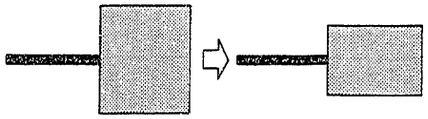


Fig. 5-1

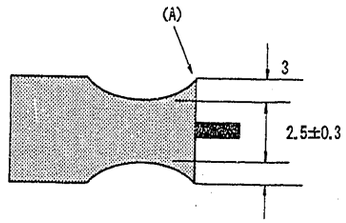



Fig. 5-2



## 6. CHECKING THE TORQUE

There are two types of cassette torque meter.
Choose the applicable one for the measurement to be performed.

| Item | VCR mode | Measured reel disk | Torque value | Torque cassette used |
|---|---|---|---|---|
| Take-up torque | Playback | Take-up | 7-13 g-cm | SRK-8T-112<br>SRK-8T-132 |
| Rewind torque | Reverse search | Supply | 25-73 g-cm | SRK-8T-132 |
| Take-up brake torque | Reverse search to stop | Take-up | 10 g-cm ro more | SRK-8T-112<br>SRK-8T-132 |
| Slack removal torque | Unloading | Supply | 25-37 g-cm | SRK-8T-132 |

## 7. MODIFICATION TO ATF-R JIG (Fig. 7-1)

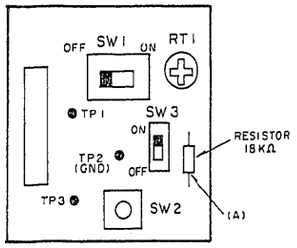
Caution: The ATF-R jig must be modified for the following adjustments. After completing these, be sure to reverse the modification.
- 4.4 Supply/Take-up Guide Roller Height Adjustment
- 5. ADJUSTMENT AFTER REPLACING THE CYLINDER

●Procedure

1) Shout terminal (A) of the resistor and TP2 (GND) on the ATF-R jig.

Note: This modification makes SW2 on the ATF-R jig a PCM area observation switch.

Caution: Use a shorting clip, etc. to short the parts; this can be removed easily after adjustment is completed. A modification is also necessary in the same way when the ATF jig is used.



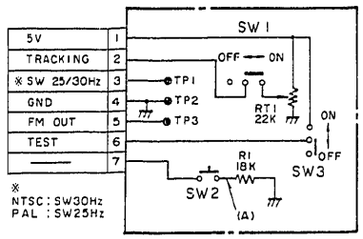




Fig. 7-1

# MECHANICAL BLOCK MAINTENANCE/INSPECTION PROCEDURE

## 1. Required Maintenance/Inspection

The mechanical block (tape transport system) in an 8mm video camera/recorder uses very precise components. If any of these components is worn or dirty, the symptoms will be the same as if the component is defective.
To ensure a good picture, the tape transport system must be cleaned and lubricated periodically, and worn-out components must be replaced.

## 2. Scheduled Maintenance/Inspection

Schedules for maintenance and inspection are not fixed because they vary according to the way in which and what for the customer uses the camera/recorder and the environment in which it is used. But, in general home use, a good picture will be maintained if inspection and maintenance are done every 500 hours.
Refer to Table 4 for the components which must be maintained and inspected and the details of the maintenance/inspection schedules.
Lubricate oil when replacing components.

Table 1 Average hours used per day and maintenance/inspection schedules

| Average hours per day | About 6 months ↓ | About 9 months ↓ | About 18 months ↓ |
|---|---|---|---|
| One hour | ▨▨▨▨▨▨▨▨▨▨▨▨ | | |
| Two hours | ▨▨▨▨▨▨ | | |
| Three hours | ▨▨ | | |

## 3. Check before Judging that Unit is Faulty

If the faults in Table 2 occur during playback, they may be remedied when the tape transport system is cleaned and lubricated. Check the conditions of cleanliness of the unit and the need for lubrication.
If from that you determine that the unit is ready for inspection and maintenance, check the components shown in Table 2.

Table 2 Defective Phenomena and Inspection Locations

| Defective phenomenon during play | Inspection location |
|---|---|
| Poor picture S/N, no color | Dirt on vide head or worn video head |
| Tape does not run or tape is slack | Dirt on pressure roller, in tape transport system or/and on cylinder |
| Low volume or sound distorted | Dirt on video head or worn video head |

## 4. Tools Needed for Inspection and Maintenance

(1) Head cleaning kit
(2) VTR oil kit
(3) Ethyl alcohol (ethanol)
(4) Gauze
(5) Cleaning tape Maxell 8M-CL MCA (dry type)

Table 3 Locations for Greasing and Lubricating using the Oil Kit

| Name | Using locations |
|---|---|
| Sonic Slidas oil (#1600) | Lubricate low-speed rotating sections |
| Froil (G31-SAY) | Grease metal or molded sections subject to light load |
| Lock paint | Fix adjustment screws and nuts |
| Pan motor oil | Not used |
| Hitazol | Not used |

The above VTR kit and head cleaning kit are those used conventionally (for VHS and VHS-C recorders). Always use these kits for maintenance.



## 5. Maintenance Procedures

### 5-1. Cleaning

(1) Cleaning video heads

First use a specified cleaning tape. Before using it, read its instruction sheet carefully. If the dirt on the video heads is too stubborn to be removed by tape, use the head cleaning kit by the following procedure. (See Fig. 1)

① Moisten the chamois leather on the cleaning stick with cleaning fluid.

② Touch the chamois leather on the cleaning stick against the head tip and gently turn the upper cylinder to the left and right.

Caution: Do not move the cleaning stick vertically or/and make sure that only the chamois leather on the cleaning stick comes into contact with the head tip. Otherwise, the head tip could be damaged.

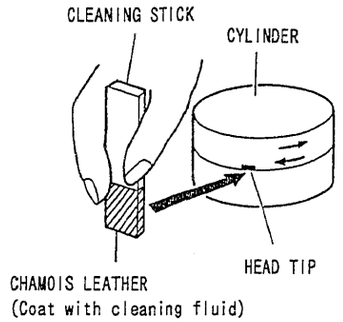



Fig. 1 Vide Head Cleaning Procedure

(2) Cleaning the tape transport system

Moisten gauze with ethyl alcohol and use it to wipe the surfaces of components which come into contact with the tape.

Caution: Be careful that the tape transport components are not damaged nor deformed by cleaning.

### 5-2. Lubricating Sonic Slidas Oil (#1600)

(1) Periodic lubrication

Lubricate the specified locations only when replacing components.
Normally, it is not necessary to lubricate in a period other than components are replaced.

(2) Procedure

Use the oiler to apply one or two drop of Sonic Slidas oil to the specified sections. Refer to the exploded views for the lubricating locations.

Caution: Do not use too much oil because it may spill over or leak, coming into contact with rotating parts and causing slippage or other defects.
If too much oil is applied, wipe clean using gauze moistened with ethyl alcohol.

### 5-3. Greasing the Froil (G31-SAY)

(1) Periodic greasing

Grease the specified locations only when replacing components.
Normally, it is not necessary to grease in a period other than components are replaced.

(2) Procedure

Apply Froil with a stick or brush to the specified locations. Refer to the exploded views for the greasing locations.

Caution: Do not use excess Froil. It may come into contact with the tape transport components and may cause defects.
Wipe off any excess using gauze moistened with ethyl alcohol.

Table 4 Parts to be Maintained/Inspected and Maintenance/Inspection Schedules

Caution: The following table dose not apply to all units. The maintenance/inspection schedules depend no how the unit is used and environment in which it is used.

| Components \ Hours | 500 | 1000 | 1500 | 2000 | 2500 | 3000 |
|---|---|---|---|---|---|---|
| Video heads (Cylinder) | Clean | Clean/ Replace | Clean | Clean/ Replace | Clean | Clean/ Replace |
| Supply guide roller | Clean | Clean | Clean | Clean | Clean | Clean |
| Take-up guide roller | Clean | Clean | Clean | Clean | Clean | Clean |
| Supply guide pole | Clean | Clean | Clean | Clean | Clean | Clean |
| Impedance roller | Clean | Clean | Clean | Clean | Clean | Clean |
| Tension pole | Clean | Clean | Clean | Clean | Clean | Clean |
| Pull-out pole | Clean | Clean | Clean | Clean | Clean | Clean |
| Pressure roller | Clean | Clean | Clean | Clean/ Replace | Clean | Clean |
| Supply reel disk | ——— | ——— | ——— | Replace | ——— | ——— |
| Take-up reel disk | ——— | ——— | ——— | Replace | ——— | ——— |
| Tension band | ——— | Replace | ——— | Replace | ——— | Replace |
| Capstan belt | ——— | ——— | ——— | Replace | ——— | ——— |
| Reel drive idler | ——— | ——— | ——— | Replace | ——— | ——— |
| Capstan motor shaft (Capstan motor) | Clean | Clean | Clean | Clean/ Replace | Clean | Clean |
| Loading motor | ——— | ——— | ——— | Replace | ——— | ——— |



CHAPTER 5

# SCHEMATIC & CIRCUIT BOARD DIAGRAMS

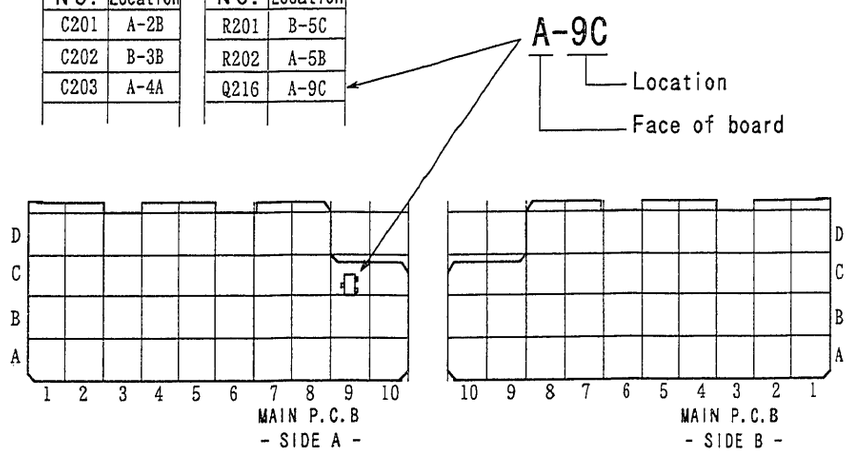
[Parts Location Indexing Tables]

This service manual shows the parts location indexing tables beside the major circuit board diagrams. These tables indicate the locations of each part on the circuit boards. Use the tables to locate the parts on the circuit boards.

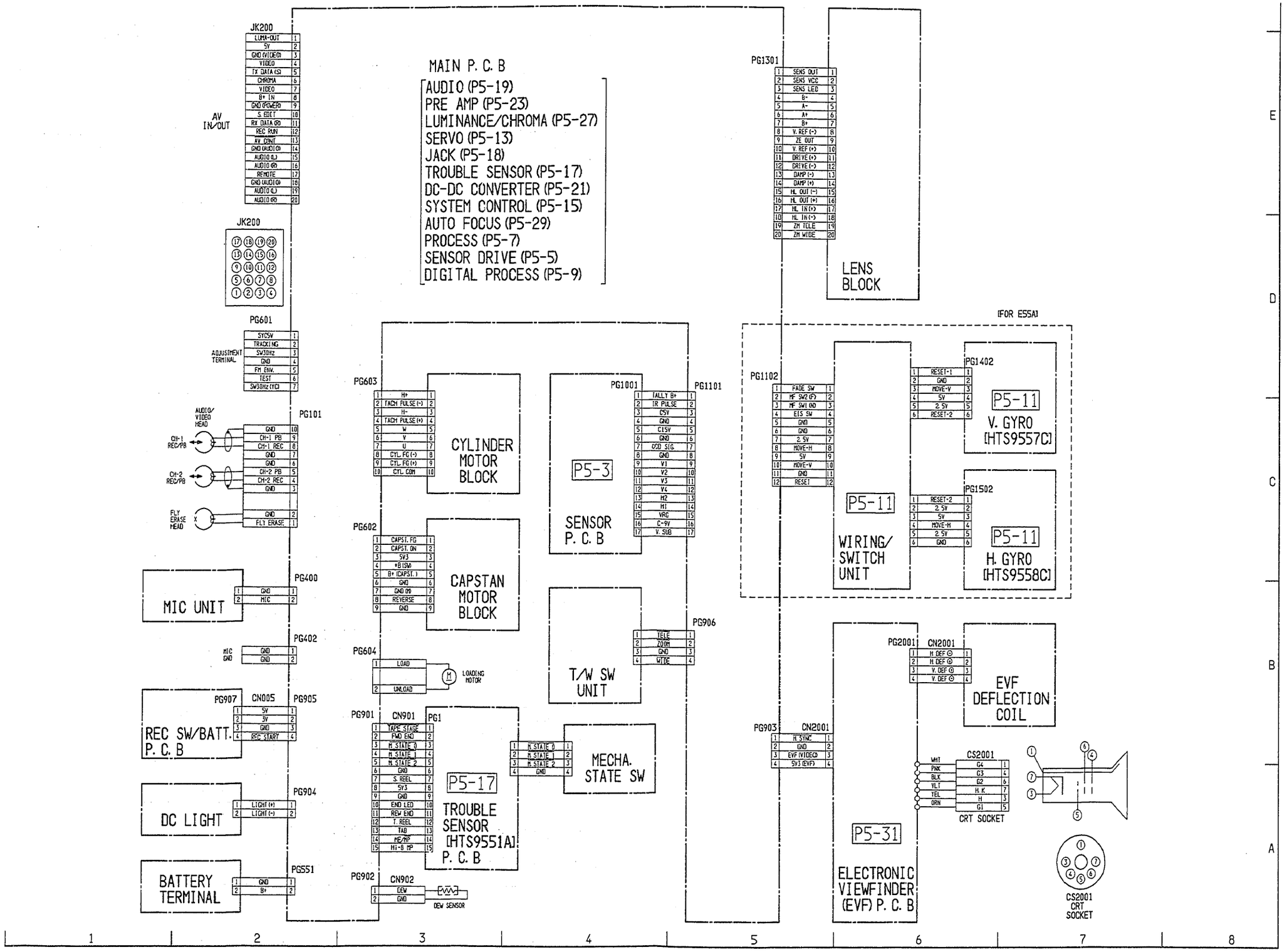
IDENTIFICATION OF PARTS LOCATION

| Symbol No. | Parts Location |
|---|---|
| C201 | A-2B |
| C202 | B-3B |
| C203 | A-4A |

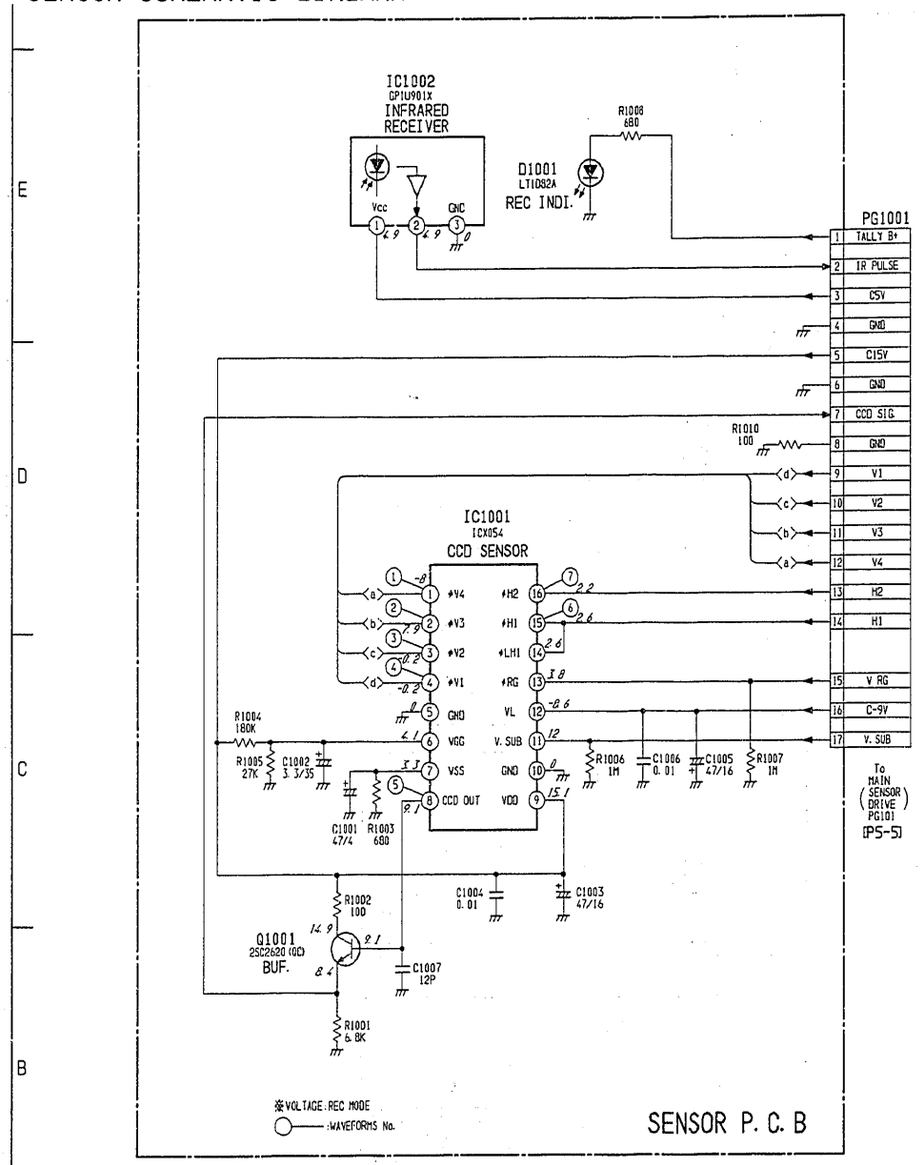
| Symbol No. | Parts Location |
|---|---|
| R201 | B-5C |
| R202 | A-5B |
| Q216 | A-9C |



# INTERNAL WIRING DIAGRAM

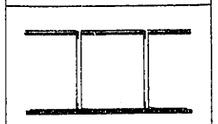


# SENSOR SCHEMATIC DIAGRAM

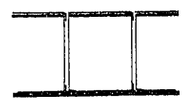



# SENSOR/PROCESS WAVEFORMS

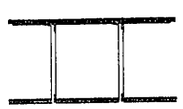
1-A IC1001-1 9.0Vp-p
2V/5.0msec.cm
COLOR CHART



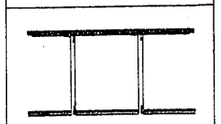
2-A IC1001-2 9.0Vp-p
2V/5.0msec.cm
COLOR CHART



3-A IC1001-3 9.0Vp-p
2V/5.0msec.cm
COLOR CHART



4-A IC1001-4 9.0Vp-p
2V/5.0msec.cm
COLOR CHART



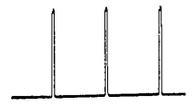
5-A IC1001-8 600mVp-p
0.2V/20.0μ sec.cm
COLOR CHART

6-A IC1001-15 6.0Vp-p
2V/20.0μ sec.cm
COLOR CHART

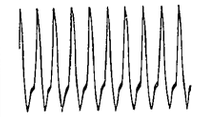
7-A IC1001-16 6.0Vp-p
2V/20.0μ sec.cm
COLOR CHART

1-A IC1101-3 300mVp-p
0.1V/20.0μ sec.cm
COLOR CHART

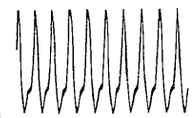
2-A IC1101-26 3.3Vp-p
1V/20.0μ sec.cm
COLOR CHART



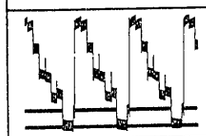
3-A IC1101-45 2.7Vp-p
0.5V/100nsec.cm
COLOR CHART



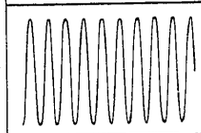
4-A IC1101-46 2.7Vp-p
0.5V/100nsec.cm
COLOR CHART



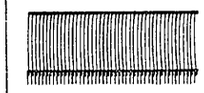
5-A IC1102-31 1.0Vp-p
0.2V/20.0μ sec.cm
COLOR CHART



6-A IC1102-42 4.0Vp-p
1V/100nsec.cm
COLOR CHART



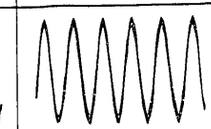
7-A IC1103-6 3.3Vp-p
1V/10.0μ sec.cm
COLOR CHART



8-A IC1103-14 3.3Vp-p
1V/5.0msec.cm
COLOR CHART

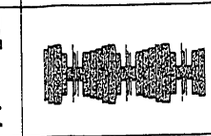
9-A IC1103-19 3.3Vp-p
1V/20.0μ sec.cm
COLOR CHART

10-A IC1103-27 1.1Vp-p
0.2V/20.0nsec.cm
COLOR CHART

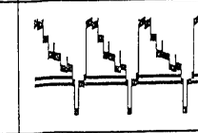


11-A

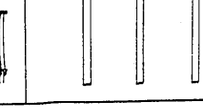
12-A IC1103-42 600mVp-p
0.2V/20.0μ sec.cm
COLOR CHART



13-A IC1103-46 1.0Vp-p
0.2V/20.0μ sec.cm
COLOR CHART

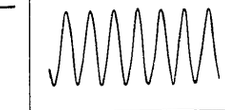


14-A IC1103-90 3.3Vp-p
1V/20.0μ sec.cm
COLOR CHART

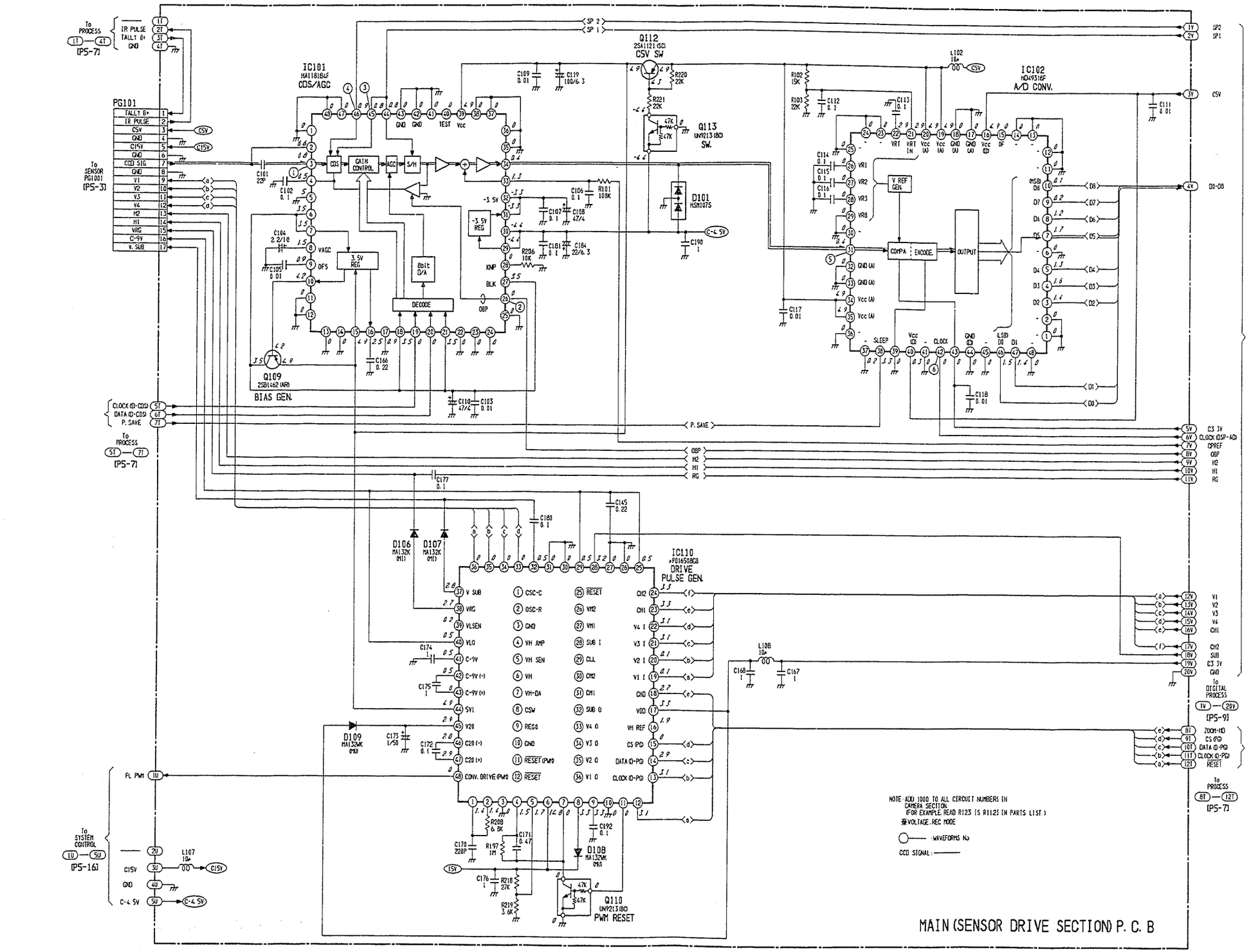


15-A IC1103-103 3.3Vp-p
1V/20.0μ sec.cm
COLOR CHART

16-A IC1105-3 4.0Vp-p
1V/50.0nsec.cm
COLOR CHART

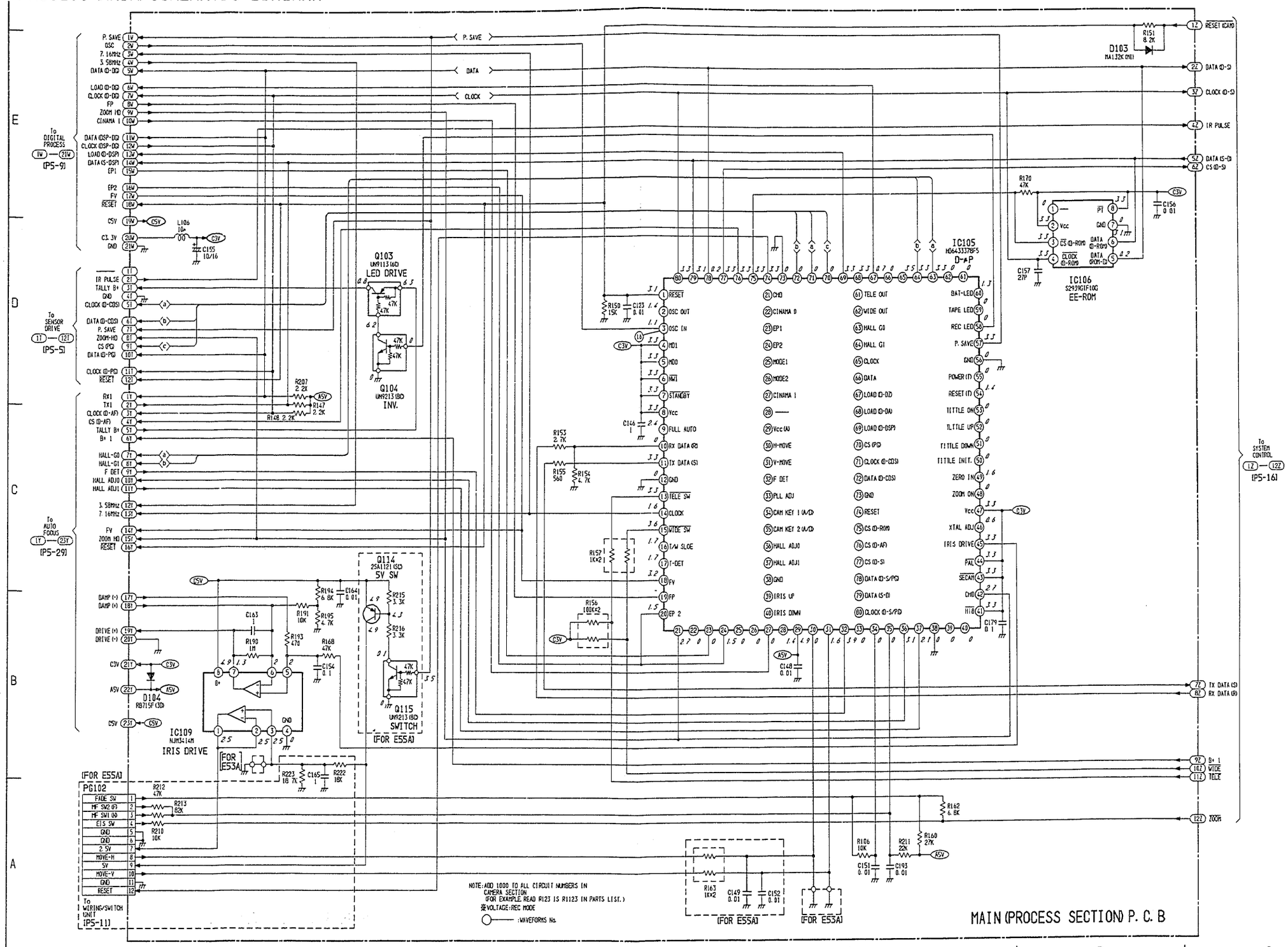


# SENSOR DRIVE (MAIN) SCHEMATIC DIAGRAM



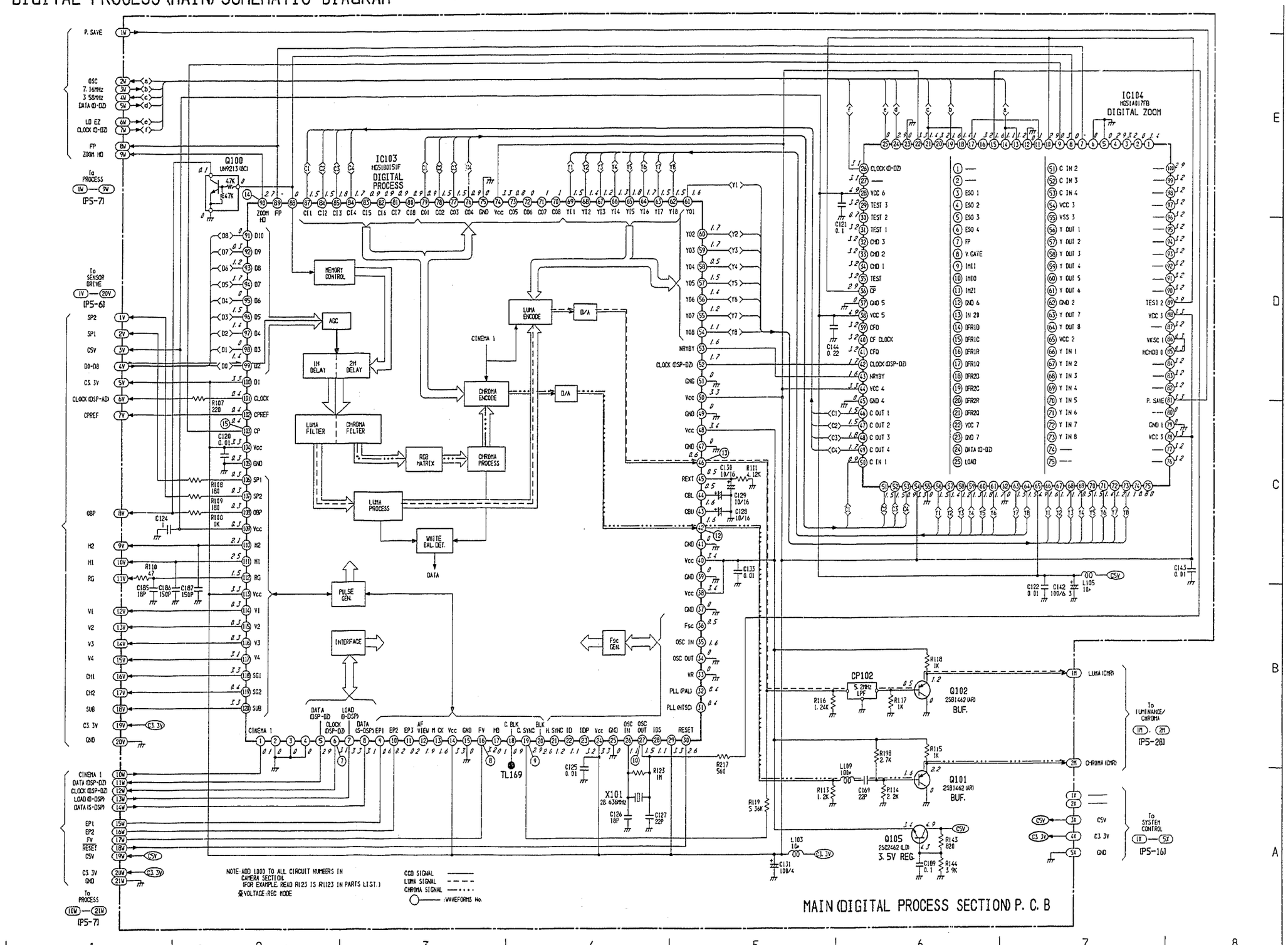

SENSOR DRIVE 5-5 5-6 SENSOR DRIVE

# PROCESS (MAIN) SCHEMATIC DIAGRAM



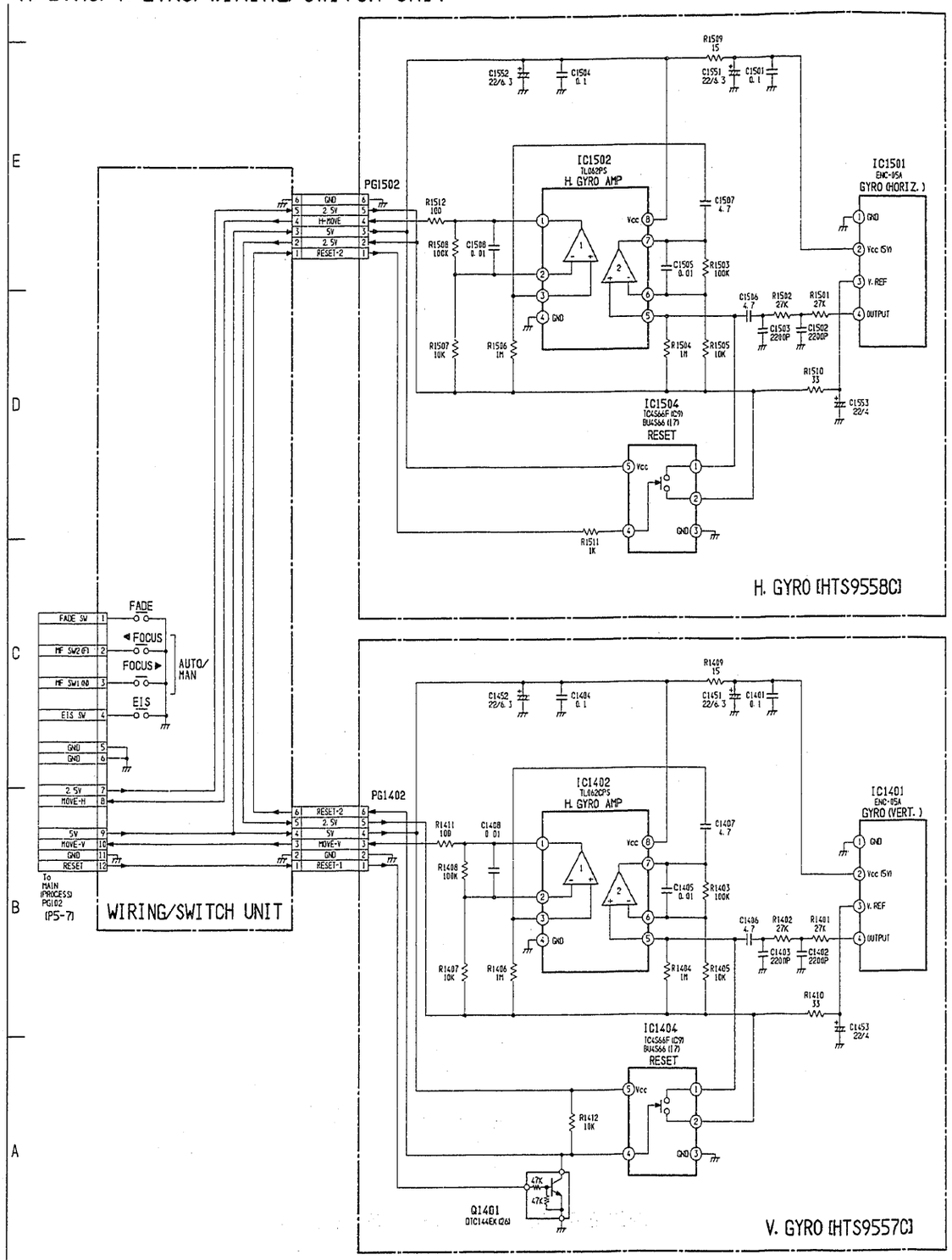

PROCESS 5-7 5-8 PROCESS

# DIGITAL PROCESS (MAIN) SCHEMATIC DIAGRAM



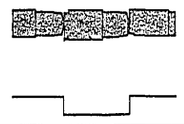

DIGITAL PROCESS 5-9 5-10 DIGITAL PROCESS

# H. GYRO. V. GYRO. WIRING/SWITCH UNIT

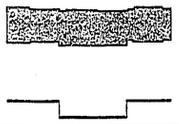



# SERVO WAVEFORMS

1-B IC601-4 350mVp-p
0.2V/5.0msec.cm
PLAY

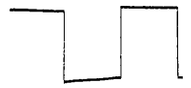


8-B PG601-5 400mVp-p
0.2V/5.0msec.cm
PLAY

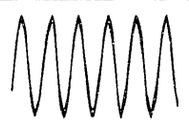


2-A IC601-7 2.7Vp-p
1V/20.0μsec.cm
REC

9-A PG601-7 4.2Vp-p
1V/5.0msec.cm
REC/PLAY

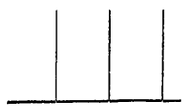


3-A IC601-11 750mVp-p
0.2V/50.0nsec.cm
REC/PLAY

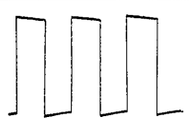


4-A IC601-18 5.1Vp-p
2V/20.0μsec.cm
REC/PLAY

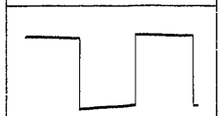
5-A IC602-17 5.2Vp-p
1V/10.0msec.cm
REC/PLAY



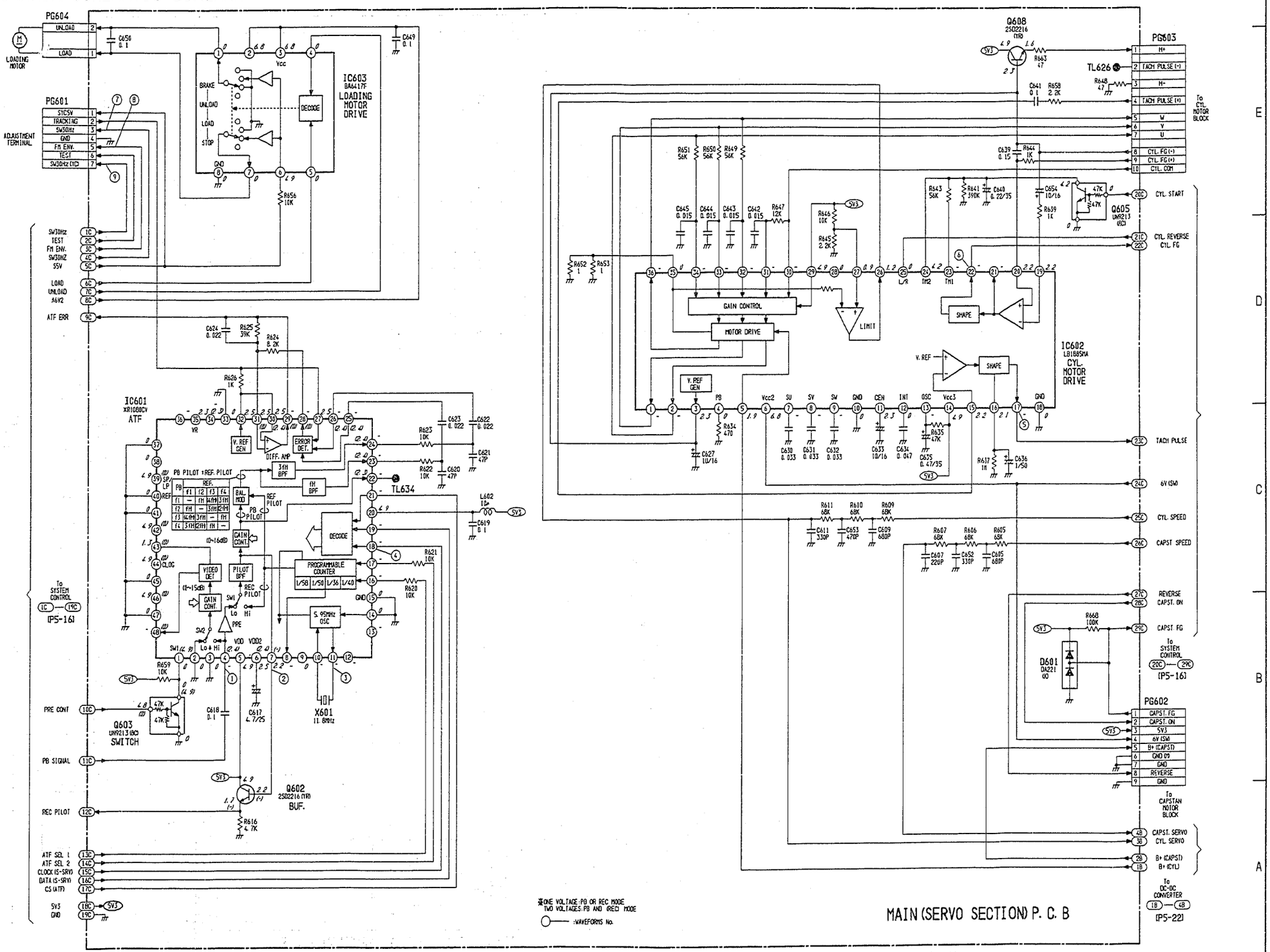
6-A IC602-22 5.0Vp-p
1V/1.0msec.cm
REC/PLAY



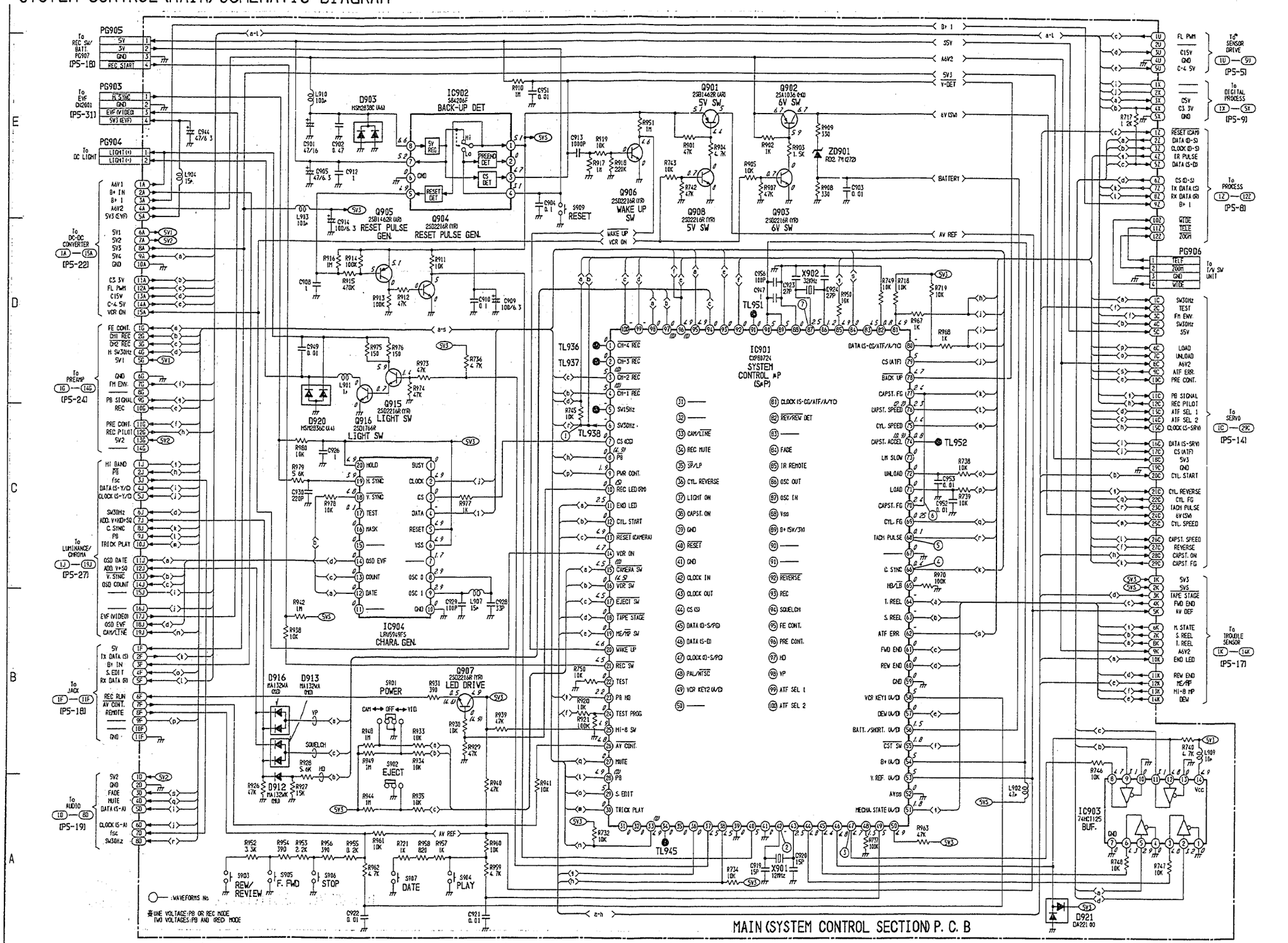
7-A PG601-3 5.1Vp-p
1V/5.0msec.cm
REC/PLAY



# SERVO (MAIN) SCHEMATIC DIAGRAM

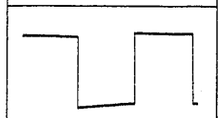


# SYSTEM CONTROL (MAIN) SCHEMATIC DIAGRAM

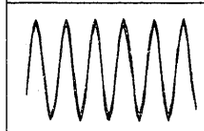


# SYSTEM CONTROL WAVEFORMS

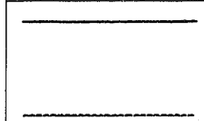
1-A IC901-6 4.2Vp-p
1V/5.0msec.cm
REC/PLAY



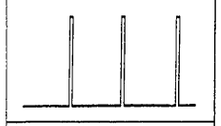
2-A IC901-42 4.7Vp-p
1V/50.0nsec.cm
REC/PLAY



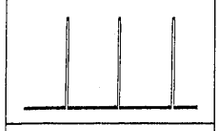
3-A IC901-47 5.0Vp-p
1V/20.0μ sec.cm
REC/PLAY



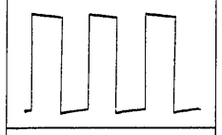
4-A IC901-66 5.0Vp-p
1V/20.0μ sec.cm
REC/PLAY



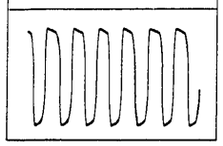
5-A IC901-68 5.0Vp-p
1V/10.0msec.cm
REC/PLAY



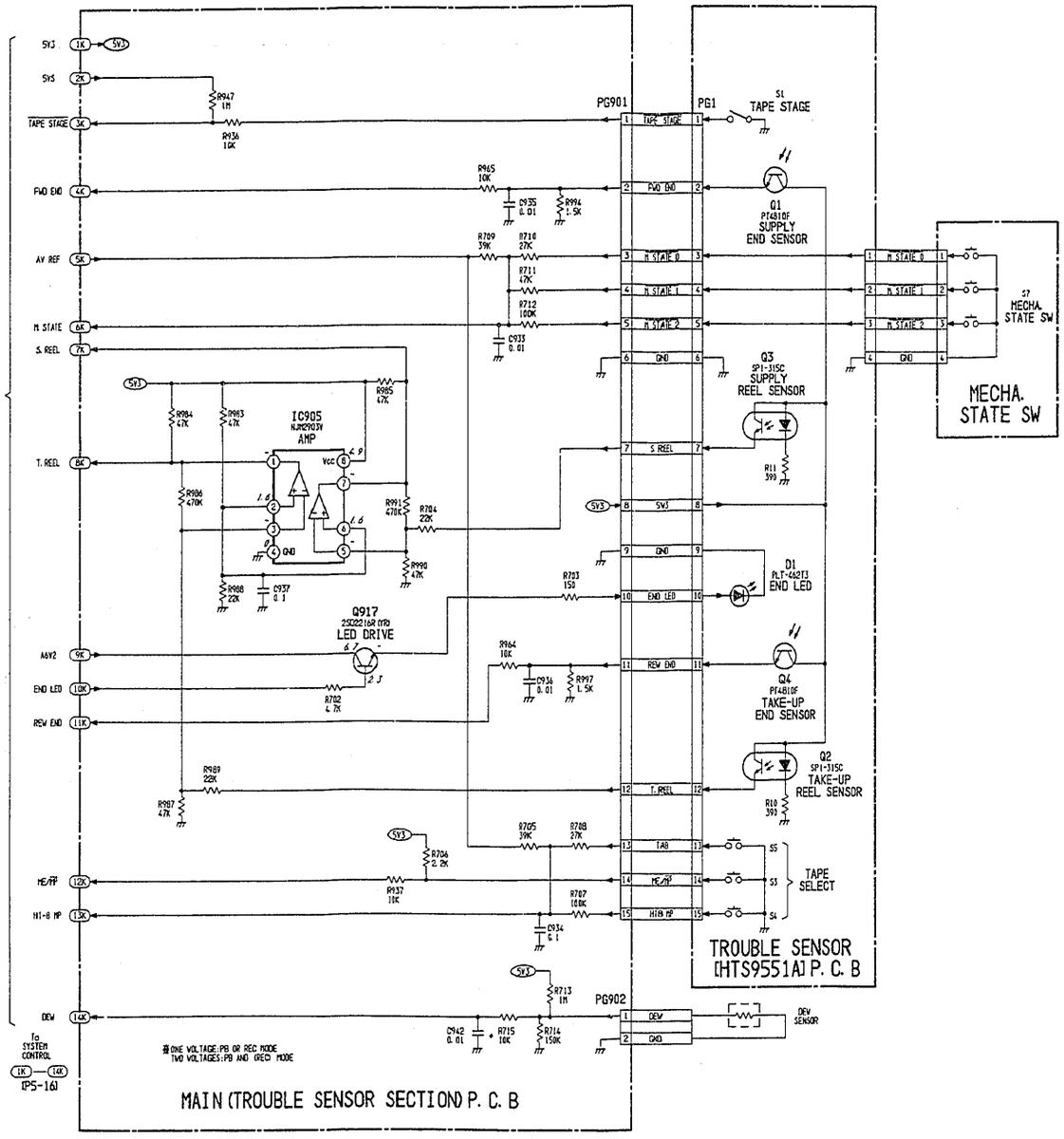
6-A IC901-70 5.0Vp-p
1V/200μ sec.cm
REC/PLAY



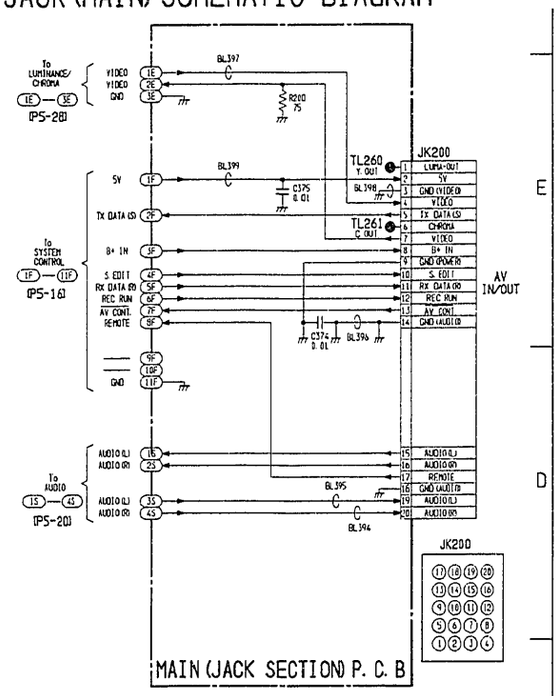
7-A IC901-87 5.3Vp-p
1V/20.0μ sec.cm
REC/PLAY



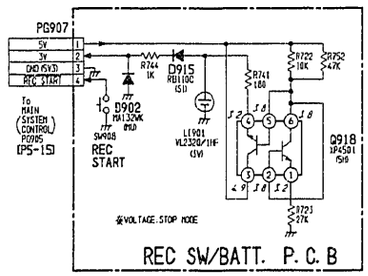
# TROUBLE SENSOR (MAIN) SCHEMATIC DIAGRAM



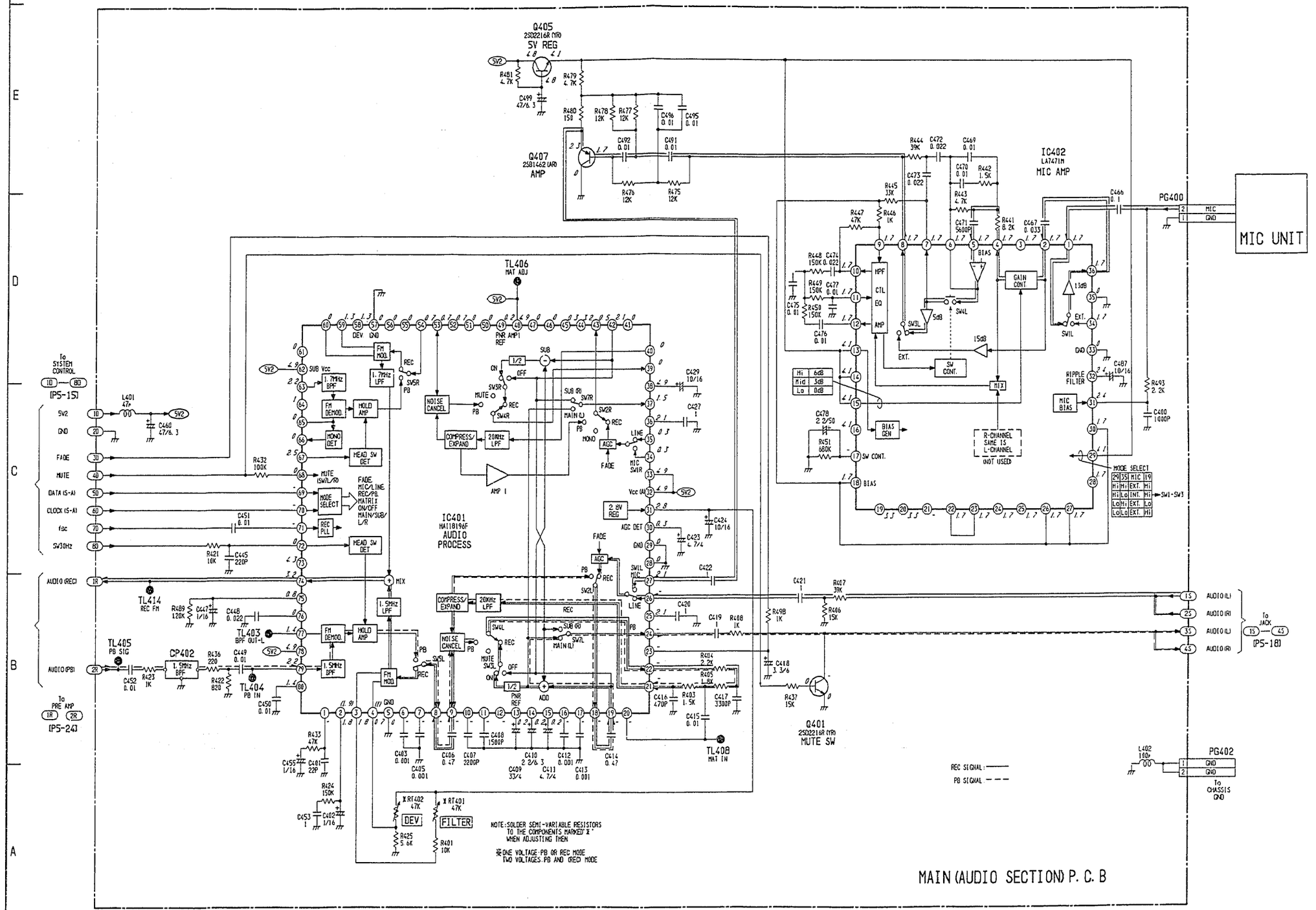

# JACK (MAIN) SCHEMATIC DIAGRAM



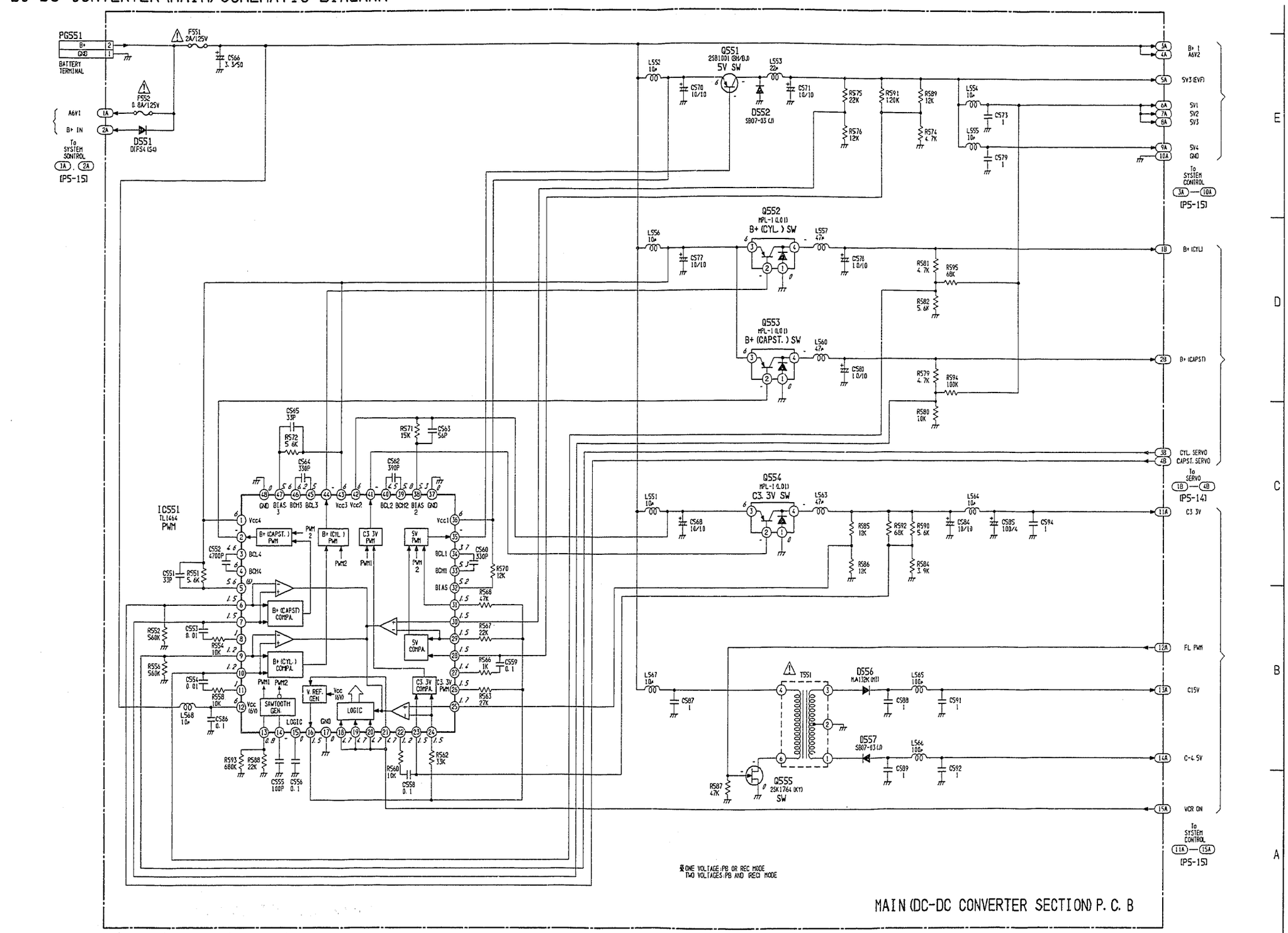

# REC SW/BATT. SCHEMATIC DIAGRAM



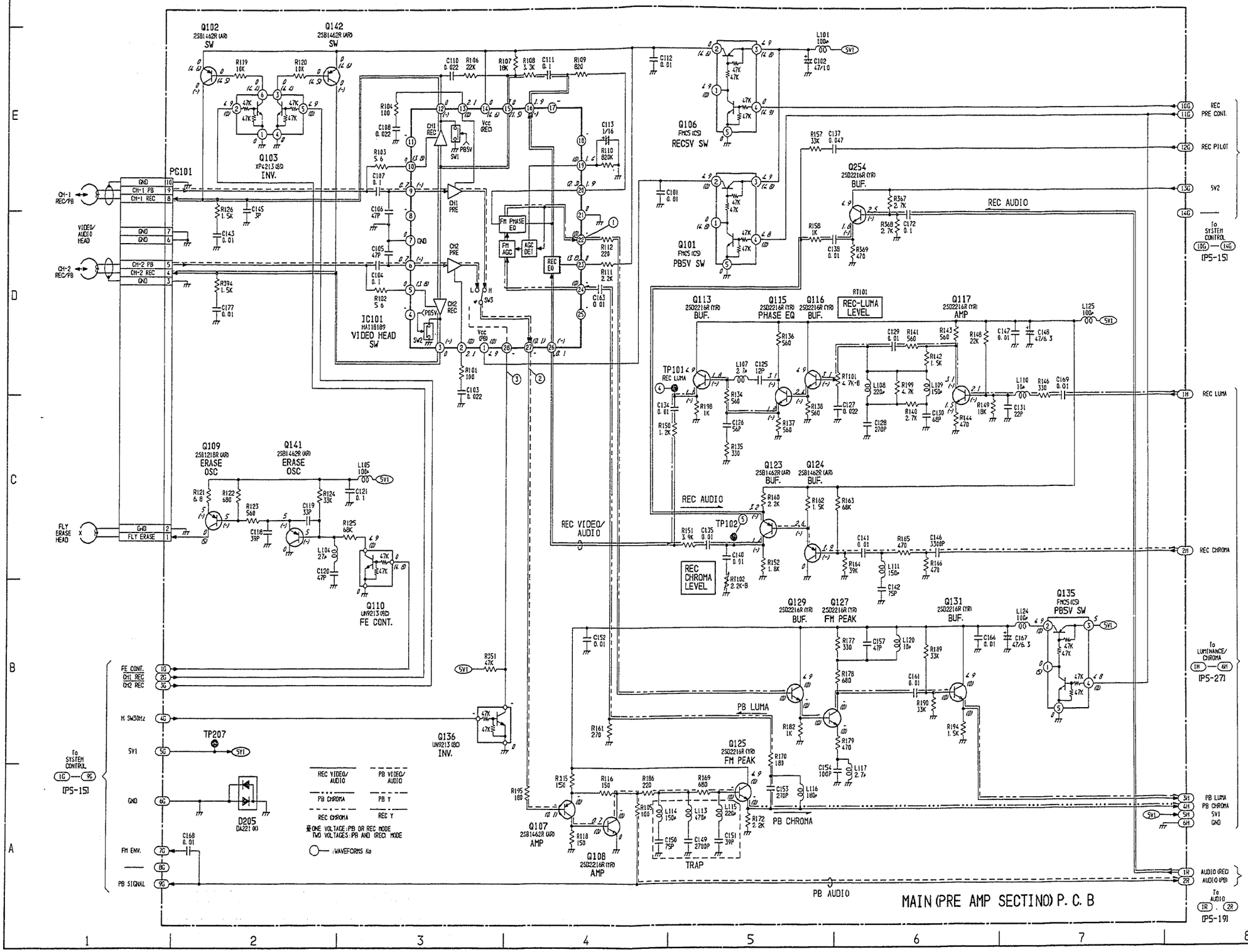
# AUDIO (MAIN) SCHEMATIC DIAGRAM



# DC-DC CONVERTER (MAIN) SCHEMATIC DIAGRAM



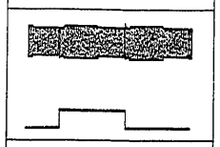
# PRE AMP (MAIN) SCHEMATIC DIAGRAM



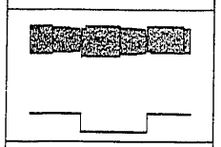

PRE AMP 5-23 5-24 PRE AMP

# PRE AMP WAVEFORMS

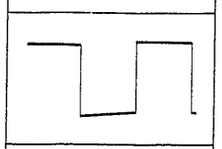
1-B IC101-22 350mVp-p
0.2V/5.0msec.cm
PLAY



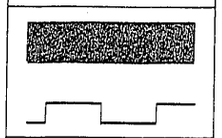
2-B IC101-27 200mVp-p
0.1V/5.0msec.cm
PLAY



3-A IC101-28 2.2Vp-p
0.5V/5.0msec.cm
REC/PLAY



4-A TP101 210mVp-p
0.1V/5.0msec.cm
REC

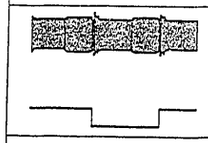
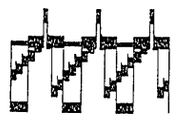
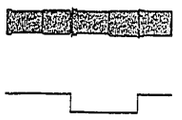
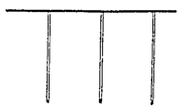
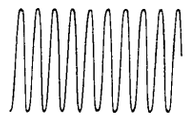
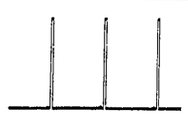
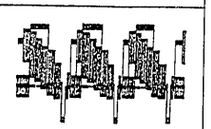
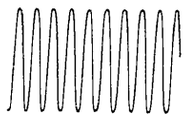
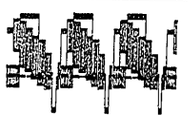
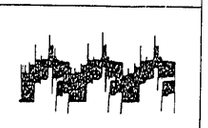
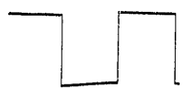


5-A TP102 140mVp-p
50mV/20.0μ sec.cm
REC

1 2 3 4

A B C D E

# LUMINANCE/CHROMA WAVEFORMS

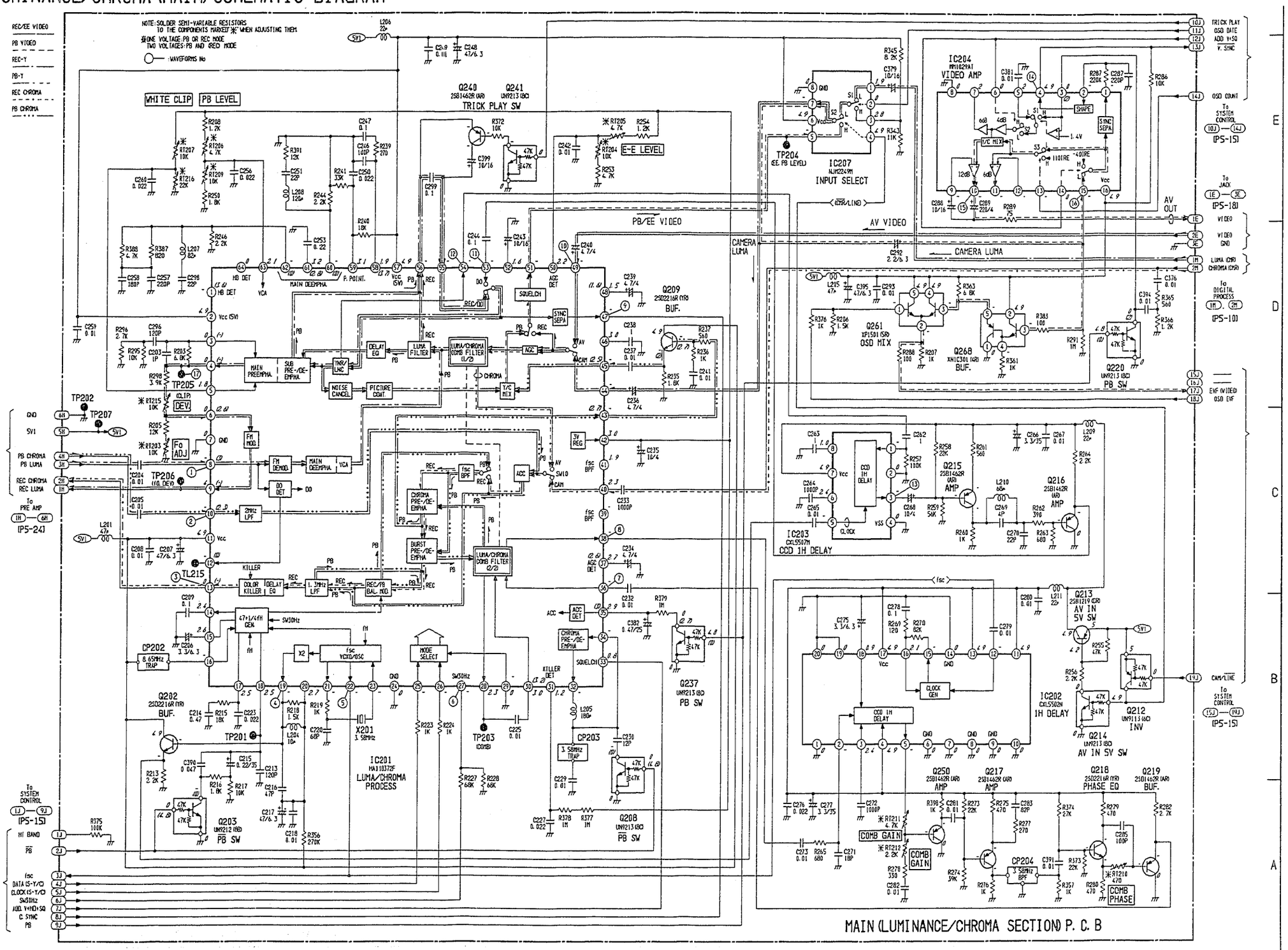
| | | |
|---|---|---|
| 1-B IC201-8 400mVp-p<br>0.2V/5.0msec.cm<br>PLAY | 7-B IC201-36 180mVp-p<br>50mV/20.0μ sec.cm<br>PLAY | 13-A IC203-3 550mVp-p<br>0.1V/20.0μ sec.cm<br>REC/PLAY |
|  | |  |
| 2-B IC201-10 300mVp-p<br>0.2V/5.0msec.cm<br>PLAY | 8-A IC201-38 160mVp-p<br>50mV/20.0μ sec.cm<br>REC | 14-A IC204-4 5.0Vp-p<br>1V/5.0msec.cm<br>REC/PLAY |
|  | |  |
| 3-A IC201-13 300mVp-p<br>0.1V/20.0μ sec.cm<br>REC | 8-B IC201-38 300mVp-p<br>0.1V/20.0μ sec.cm<br>PLAY | 15-A IC204-10 1.9Vp-p<br>0.5V/20.0μ sec.cm<br>REC/PLAY |
| | | |
| 4-A IC201-19 330mVp-p<br>0.1V/100nsec.cm<br>REC/PLAY | 9-A IC201-47 5.0Vp-p<br>1V/20.0μ sec.cm<br>REC/PLAY | 16-A IC204-15 970mVp-p<br>0.2V/20.0μ sec.cm<br>REC/PLAY |
|  |  |  |
| 5-A IC201-22 420mVp-p<br>0.1V/200nsec.cm<br>REC/PLAY | 10-A IC201-49 1Vp-p<br>0.2V/20.0μ sec.cm<br>REC | 17-A TP205 310mVp-p<br>0.1V/20.0μ sec.cm<br>REC |
|  |  |  |
| 6-A IC201-27 2.0Vp-p<br>0.5V/5.0msec.cm<br>REC/PLAY | 11-A IC201-53 300mVp-p<br>0.1V/20.0μ sec.cm<br>REC/PLAY | |
|  | | |
| 7-A IC201-36 100mVp-p<br>50mV/20.0μ sec.cm<br>REC | 12-A IC201-54 550mVp-p<br>0.1V/20.0μ sec.cm<br>REC/PLAY | |
| | | |

E D C B A

1 2 3 4

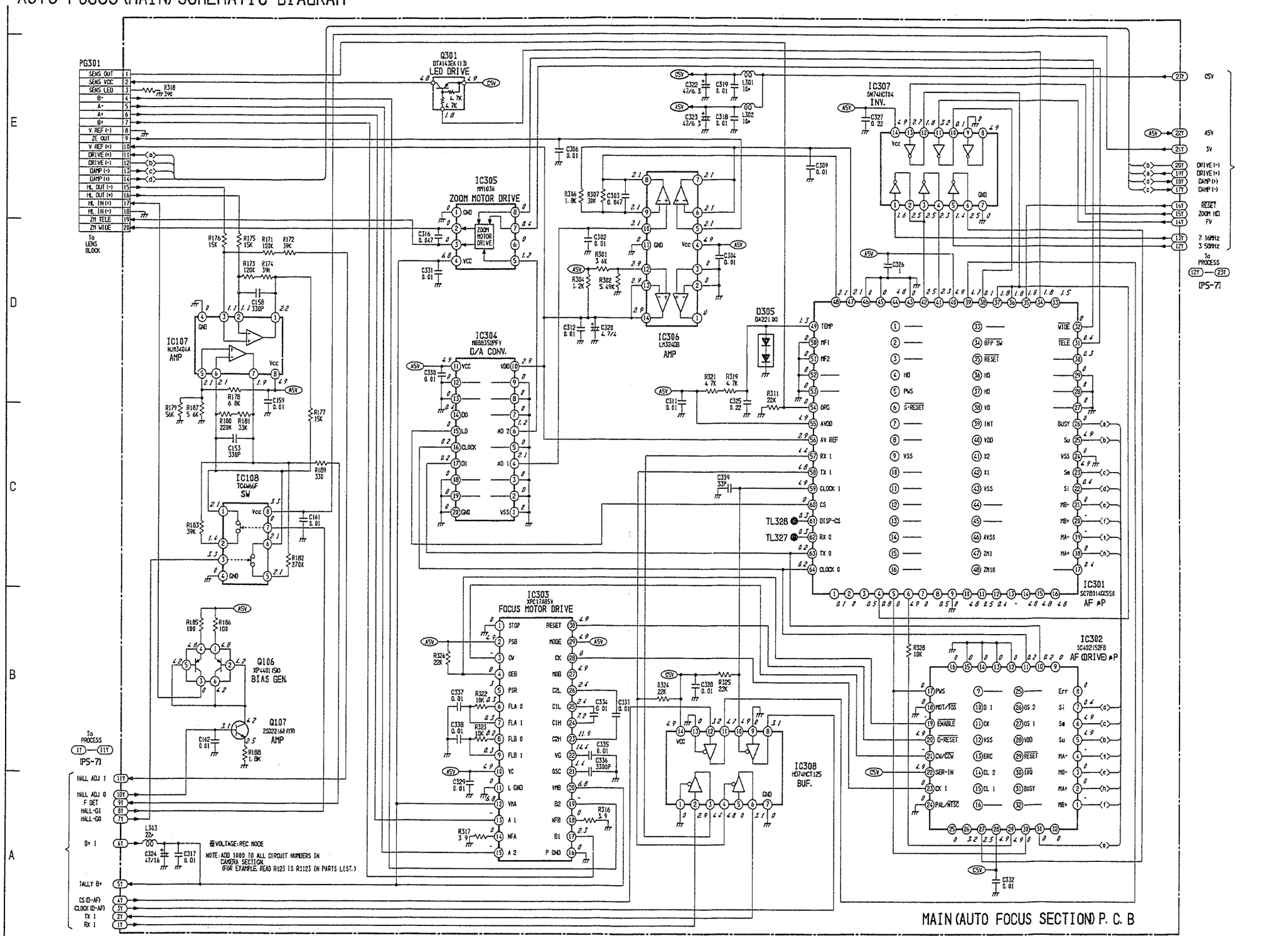
5-26 LUMINANCE/CHROMA WAVEFORMS

# LUMINANCE/CHROMA (MAIN) SCHEMATIC DIAGRAM

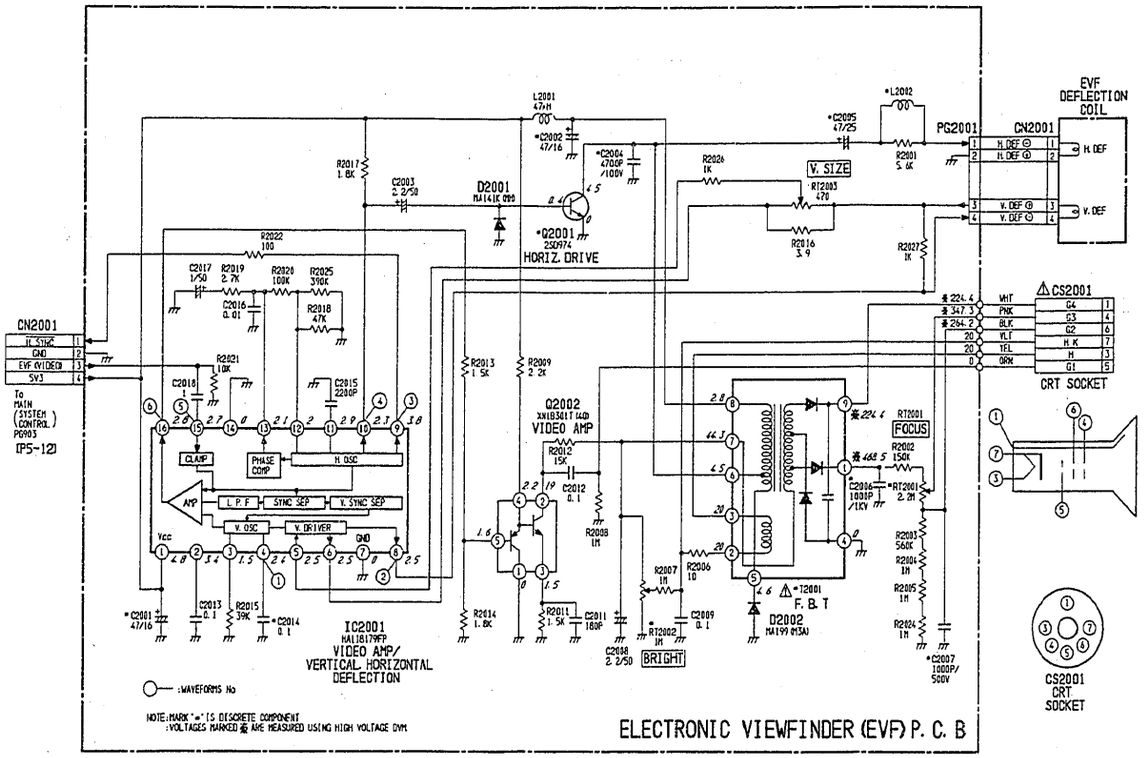



LUMINANCE/CHROMA 5-27 5-28 LUMINANCE/CHROMA

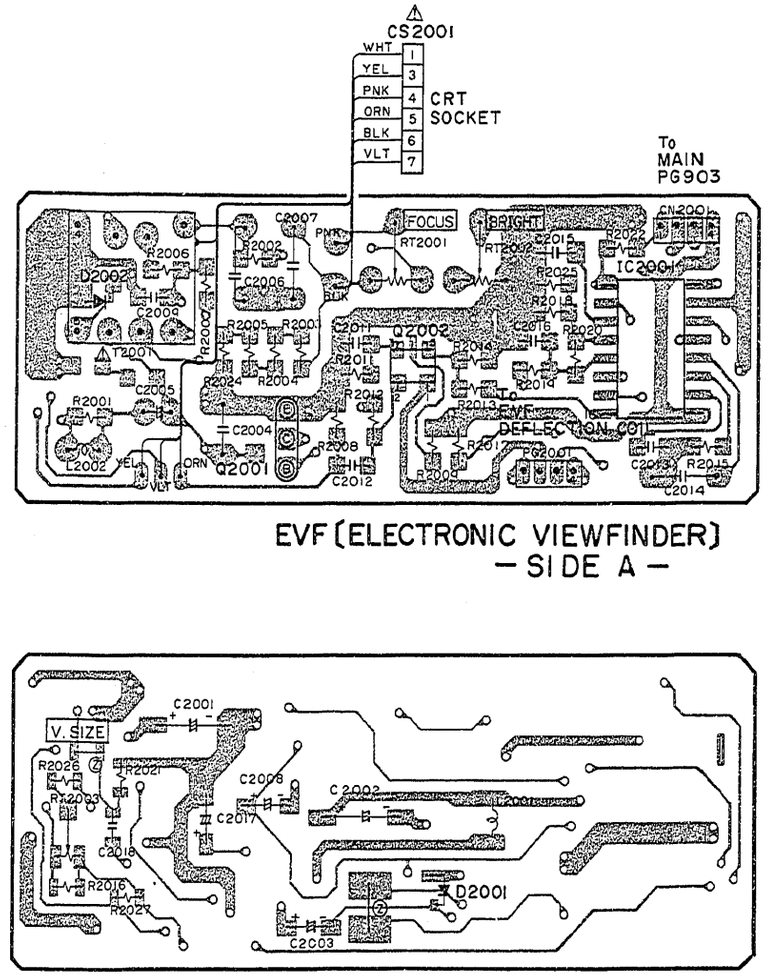
# AUTO FOCUS (MAIN) SCHEMATIC DIAGRAM



## ELECTRONIC VIEWFINDER (EVF) SCHEMATIC DIAGRAM




## ELECTRONIC VIEWFINDER (EVF) CIRCUIT BOARD

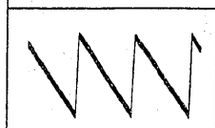
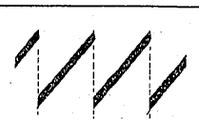
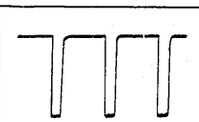
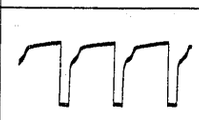
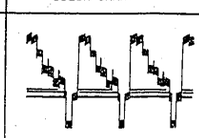
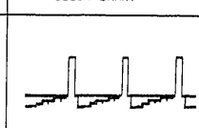



EVF (ELECTRONIC VIEWFINDER) — SIDE A —

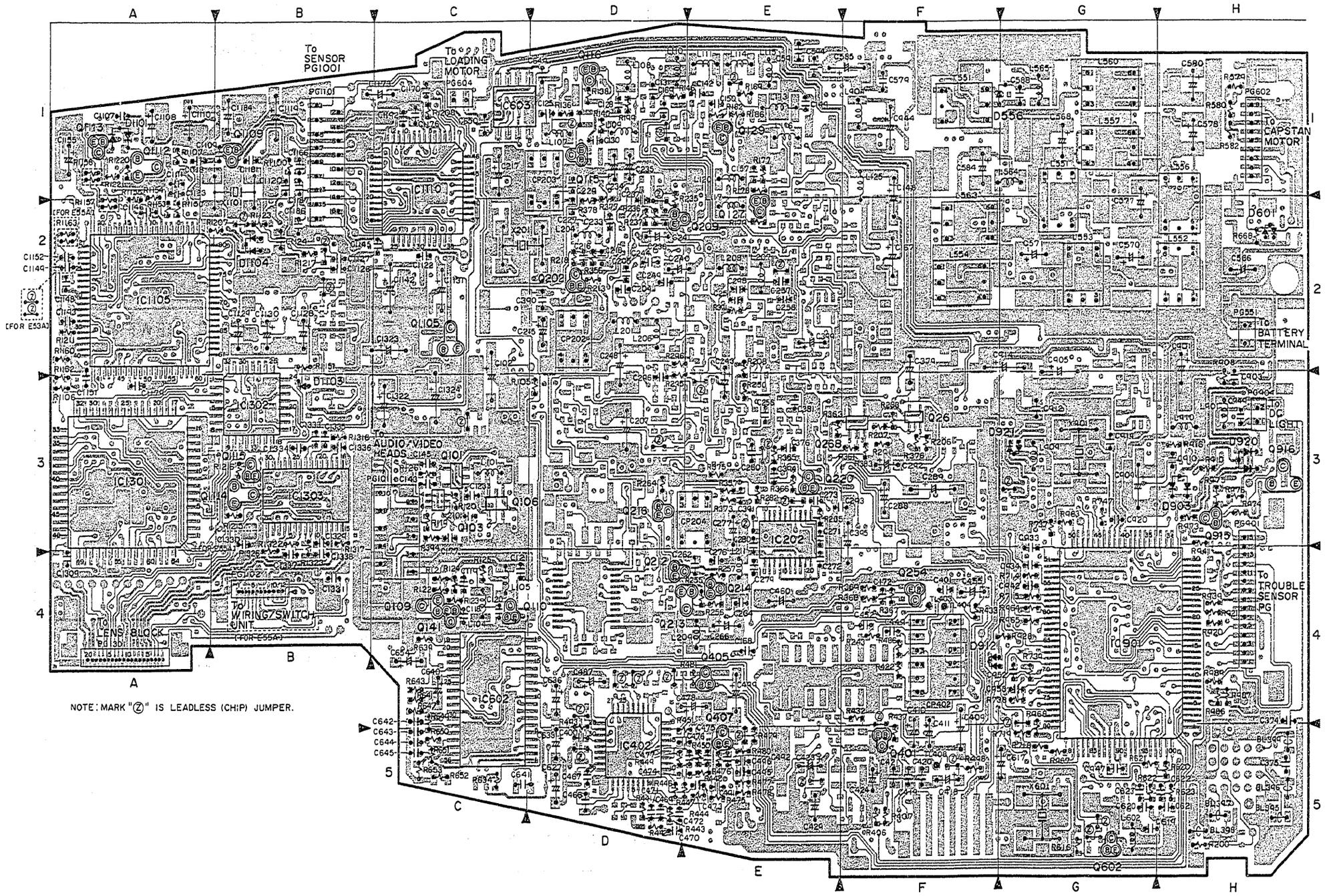
EVF (ELECTRONIC VIEWFINDER) — SIDE B —

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.

## ELECTRONIC VIEWFINDER (EVF) WAVEFORMS

| 1-A IC2001-4 950mVp-p 0.2V/5.0msec.cm COLOR CHART | 2-A IC2001-8 2.3Vp-p 0.5V/5.0msec.cm COLOR CHART | 3-A IC2001-9 5.0Vp-p 1V/20.0μ sec.cm COLOR CHART | 4-A IC2001-10 1.7Vp-p 0.5V/20.0μ sec.cm COLOR CHART | 5-A IC2001-15 900mVp-p 0.2V/20.0μ sec.cm COLOR CHART | 6-A IC2001-16 2.8Vp-p 1V/20.0μ sec.cm COLOR CHART |
|---|---|---|---|---|---|
|  |  |  |  |  |  |

# MAIN CIRCUIT BOARD [SIDE-A]



# IDENTIFICATION OF PARTS LOCATION

## MAIN

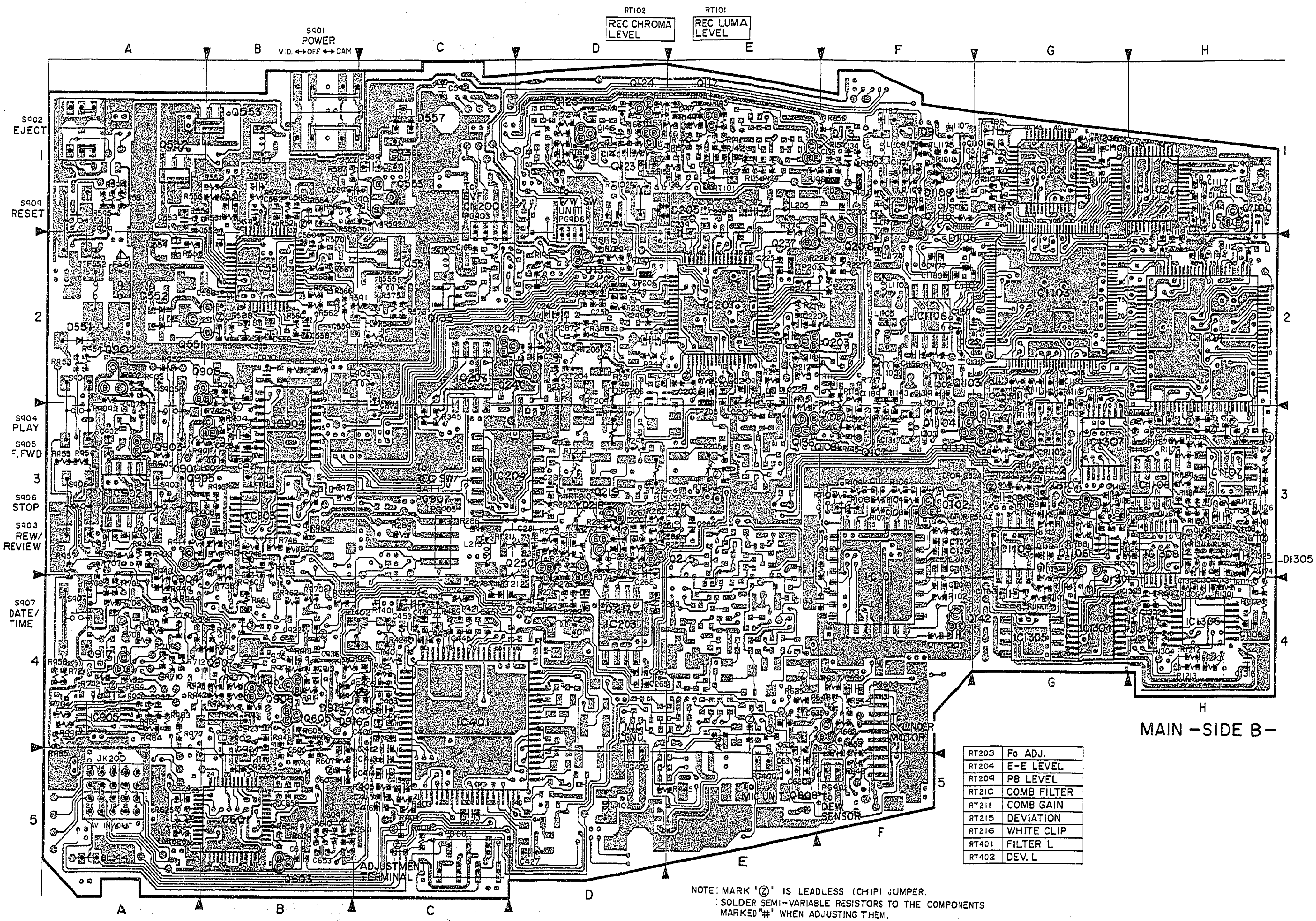
| Symbol No. | Parts Location |
|---|---|
| **BL** | |
| BL394 | B-5A |
| BL395 | A-5H |
| BL396 | A-5H |
| BL397 | A-5H |
| BL398 | A-5H |
| BL399 | A-5H |
| **C** | |
| C101 | A-3C |
| C102 | A-2C |
| C103 | B-4F |
| C104 | B-4F |
| C105 | B-3F |
| C106 | B-3F |
| C107 | B-3F |
| C108 | B-3F |
| C110 | B-3F |
| C111 | B-3F |
| C113 | B-3F |
| C118 | A-4C |
| C119 | A-4C |
| C120 | A-4C |
| C121 | A-4C |
| C123 | A-3C |
| C125 | A-1D |
| C126 | B-1E |
| C127 | B-1E |
| C128 | A-1D |
| C129 | B-1E |
| C130 | A-1D |
| C131 | A-1D |
| C134 | B-1F |
| C135 | B-1F |
| C137 | B-1D |
| C138 | B-1E |
| C140 | B-1D |
| C141 | B-1D |
| C142 | A-1E |
| C143 | A-3C |
| C145 | A-3C |
| C146 | B-1D |
| C147 | B-1E |
| C148 | A-1F |
| C149 | A-1E |
| C150 | A-1E |
| C151 | B-1D |
| C152 | B-3F |
| C153 | B-1D |
| C154 | B-1D |
| C157 | A-1E |
| C161 | B-2D |
| C163 | B-4F |
| C166 | B-2C |
| C167 | A-2F |
| C168 | A-4E |
| C169 | A-1D |
| C172 | A-4F |
| C177 | A-3C |
| C203 | B-2E |
| C204 | A-2D |
| C205 | A-2D |
| C206 | B-2E |
| C207 | A-3D |
| C208 | B-2E |
| C209 | B-2E |
| C213 | B-2E |
| C214 | B-2E |
| C215 | A-2D |
| C216 | A-2D |
| C217 | A-1C |
| C218 | A-2D |
| C220 | B-2E |
| C223 | B-2E |
| C225 | B-2E |
| C227 | A-2D |
| C229 | A-1D |
| C230 | B-1F |
| C232 | B-1E |
| C233 | A-2D |
| C234 | A-1D |
| C235 | A-1D |
| C236 | A-2D |
| C237 | A-1D |
| C238 | B-1E |
| C239 | B-1E |
| C240 | A-2D |
| C241 | A-2D |
| C242 | B-2D |
| C243 | A-3E |
| C244 | A-2D |
| C246 | B-2D |
| C247 | B-2D |
| C248 | A-2D |
| C249 | A-2D |
| C250 | B-2D |
| C251 | A-2E |
| C253 | B-2D |
| C256 | A-3E |
| C257 | A-2E |
| C258 | A-2E |
| C259 | B-2D |
| C260 | A-3E |
| C262 | A-4E |
| C263 | B-4D |
| C264 | A-4E |
| C265 | B-4D |
| C266 | A-4E |
| C267 | B-4D |
| C268 | B-3D |
| C269 | B-3E |
| C270 | B-3D |
| C271 | A-3E |
| C272 | A-4E |
| C273 | A-3E |
| C275 | B-4D |
| C276 | A-4E |
| C277 | A-3E |
| C278 | B-4D |
| C279 | A-4E |
| C280 | A-3E |
| C281 | B-3D |
| C282 | B-4C |
| C283 | B-3D |
| C285 | B-3D |
| C287 | B-3D |
| C288 | A-3F |
| C289 | A-3F |
| C292 | A-3F |
| C293 | A-3F |
| C296 | A-3D |
| C298 | A-2E |
| C299 | B-2D |
| C374 | A-4H |
| C375 | A-5H |
| C376 | A-3E |
| C379 | A-2F |
| C381 | A-3E |
| C382 | B-1E |
| C390 | A-2D |
| C391 | A-3E |
| C394 | A-3E |
| C395 | A-3F |
| C399 | A-2E |
| C400 | A-5D |
| C401 | A-4F |
| C402 | B-4C |
| C403 | B-4C |
| C405 | B-4C |
| C406 | B-4C |
| C407 | B-4C |
| C408 | B-4C |
| C409 | A-5F |
| C410 | A-5F |
| C411 | A-5F |
| C412 | B-4C |
| C413 | B-5C |
| C414 | B-5C |
| C415 | B-5C |
| C416 | B-5C |
| C417 | B-5C |
| C418 | A-5F |
| C419 | A-5F |
| C420 | A-5F |
| C421 | A-5F |
| C422 | B-5C |
| C423 | A-5E |
| C424 | A-5F |
| C429 | A-5E |
| C445 | B-4C |
| C447 | B-4C |
| C448 | B-4C |
| C449 | A-4F |
| C450 | B-4C |
| C451 | B-4C |
| C452 | A-4F |
| C453 | B-4C |
| C455 | A-4F |
| C460 | A-4E |
| C466 | A-5D |
| C467 | A-5D |
| C469 | A-5D |
| C470 | A-5D |
| C471 | A-5D |
| C472 | A-5D |
| C473 | A-5E |
| C474 | A-5D |
| C475 | A-5E |
| C476 | A-5E |
| C477 | A-5E |
| C478 | A-4E |
| C487 | A-4D |
| C491 | A-5E |
| C492 | A-5E |
| C495 | A-5E |
| C496 | A-5E |
| C499 | A-4E |
| C551 | B-1B |
| C552 | B-2B |
| C553 | B-1A |
| C554 | B-2A |
| C555 | B-2B |
| C556 | B-2B |
| C558 | B-2B |
| C559 | B-2B |
| C560 | B-2B |
| C562 | B-1B |
| C563 | B-1B |
| C564 | B-1B |
| C565 | B-1B |
| C566 | A-2H |
| C568 | A-1G |
| C570 | A-2G |
| C571 | A-2G |
| C573 | B-3C |
| C577 | A-2G |
| C578 | A-1H |
| C579 | A-1F |
| C580 | A-1H |
| C584 | A-1F |
| C585 | A-1F |
| C586 | B-2B |
| C587 | B-1B |
| C588 | A-1G |
| C589 | B-1C |
| C591 | A-1E |
| C592 | B-1C |
| C594 | A-1E |
| C605 | B-4B |
| C607 | B-5B |
| C609 | B-5B |
| C611 | B-5B |
| C617 | A-5G |
| C618 | B-5B |
| C619 | A-5G |
| C620 | A-5G |
| C621 | A-5H |
| C622 | A-5H |
| C623 | A-5G |
| C624 | B-5A |
| C627 | A-5D |
| C630 | B-5E |
| C631 | B-5E |
| C632 | B-4E |
| C633 | A-5D |
| C634 | B-4E |
| C635 | B-4E |
| C636 | A-4D |
| C639 | B-4F |
| C640 | A-4C |
| C641 | A-5C |
| C642 | A-4C |
| C643 | A-5C |
| C644 | A-5C |
| C645 | A-5C |
| C649 | A-1D |
| C650 | A-1C |
| C652 | B-5B |
| C653 | B-5B |
| C654 | A-4C |
| C658 | B-5B |
| C659 | B-5B |
| C901 | A-2H |
| C902 | B-3A |
| C903 | A-3H |
| C904 | B-3A |
| C905 | A-2G |
| C908 | B-3B |
| C909 | A-3G |
| C910 | A-3H |
| C912 | A-3G |
| C913 | B-4B |
| C914 | A-2G |
| C919 | A-3G |
| C920 | A-3G |
| C921 | B-3B |
| C922 | B-4B |
| C923 | B-4B |
| C924 | B-5B |
| C926 | B-3B |
| C928 | B-3B |
| C929 | B-3B |
| C930 | B-2B |
| C933 | A-3G |
| C934 | A-4G |
| C935 | B-4B |
| C936 | B-4B |
| C937 | B-4A |
| C942 | A-4G |
| C944 | A-1F |
| C947 | A-5G |
| C949 | A-3H |
| C951 | B-3A |
| C952 | A-4G |
| C953 | A-4G |
| C956 | B-5B |
| C1101 | B-1G |
| C1102 | B-1G |
| C1103 | B-1G |
| C1104 | B-1G |
| C1105 | B-1G |
| C1106 | B-1G |
| C1107 | A-1A |
| C1108 | A-1A |
| C1109 | A-1B |
| C1110 | A-1A |
| C1111 | A-1A |
| C1112 | B-2H |
| C1113 | B-2H |
| C1114 | B-1H |
| C1115 | B-1H |
| C1116 | B-1H |
| C1117 | B-1H |
| C1118 | A-1A |
| C1119 | A-1B |
| C1120 | A-1B |
| C1121 | B-2H |
| C1122 | A-2C |
| C1123 | A-1A |
| C1124 | A-2B |
| C1125 | B-2F |
| C1126 | A-2B |
| C1127 | A-2B |
| C1128 | A-2B |
| C1129 | A-2B |
| C1130 | A-2B |
| C1131 | A-2C |
| C1133 | B-2G |
| C1142 | A-2C |
| C1143 | B-3H |
| C1144 | B-2H |
| C1145 | A-2C |
| C1146 | A-2A |
| C1148 | A-2A |
| C1149 | A-2A |
| C1151 | A-3A |
| C1152 | A-2A |
| C1153 | B-3G |
| C1154 | B-3G |
| C1155 | A-1A |
| C1156 | B-2F |
| C1157 | B-2F |
| C1158 | B-3H |
| C1159 | B-3H |
| C1161 | B-3H |
| C1162 | B-3G |
| C1163 | B-4G |
| C1164 | B-3G |
| C1165 | B-3G |
| C1166 | A-1B |
| C1167 | B-1F |
| C1168 | B-1F |
| C1169 | B-3G |
| C1170 | A-1C |
| C1171 | B-1F |
| C1172 | B-1F |
| C1173 | A-1C |
| C1174 | B-2F |
| C1175 | B-1F |
| C1176 | A-1C |
| C1177 | B-2F |
| C1179 | A-3A |
| C1180 | B-2F |
| C1181 | A-1B |
| C1184 | A-1B |
| C1185 | B-1G |
| C1186 | A-2B |
| C1187 | A-1B |
| C1189 | B-2F |
| C1190 | B-1F |
| C1192 | A-1C |
| C1193 | A-2A |
| C1302 | B-4H |
| C1303 | B-4H |
| C1304 | B-4H |
| C1306 | B-4H |
| C1309 | A-4A |
| C1311 | B-3H |
| C1312 | B-3H |
| C1316 | B-4H |
| C1317 | B-3F |
| C1318 | B-2F |
| C1319 | B-2F |
| C1320 | B-4H |
| C1322 | A-3C |
| C1323 | A-2C |
| C1324 | A-3C |
| C1325 | B-3H |
| C1326 | B-3H |
| C1327 | B-2G |
| C1328 | B-3H |
| C1329 | A-3B |
| C1330 | A-3B |
| C1331 | A-4B |
| C1332 | B-3G |
| C1333 | A-3B |
| C1334 | A-3B |
| C1335 | A-3B |
| C1336 | A-3B |
| C1337 | A-4B |
| C1338 | A-4B |
| C1339 | B-3H |
| **CP** | |
| CP202 | A-2D |
| CP203 | A-1D |
| CP204 | A-3E |
| CP402 | A-4F |
| CP1102 | B-3G |
| **D** | |
| D205 | B-1D |
| D551 | B-2A |
| D552 | B-2A |
| D556 | A-1G |
| D557 | B-1C |
| D601 | A-2H |
| D903 | A-3H |
| D912 | A-4F |
| D913 | B-4B |
| D916 | B-4C |
| D920 | A-3H |
| D921 | A-3G |
| D1101 | A-1A |
| D1103 | A-3B |
| D1104 | A-2B |
| D1106 | B-2F |
| D1107 | B-2F |
| D1108 | B-1F |
| D1109 | B-1F |
| D1305 | B-3H |
| **F** | |
| F551 | B-2A |
| F552 | B-2A |
| **IC** | |
| IC101 | B-4F |
| IC201 | B-2E |
| IC202 | A-3E |
| IC203 | B-4D |
| IC204 | B-3C |
| IC207 | B-2C |
| IC401 | B-4C |
| IC402 | A-5D |
| IC551 | B-2B |
| IC601 | B-5B |
| IC602 | A-4C |
| IC603 | A-1C |
| IC901 | A-4G |
| IC902 | B-3A |
| IC903 | B-3B |
| IC904 | B-3B |
| IC905 | B-4A |
| IC1101 | B-1G |
| IC1102 | B-1H |
| IC1103 | B-2G |
| IC1104 | B-2H |
| IC1105 | A-2A |
| IC1106 | B-2F |
| IC1107 | B-3H |
| IC1108 | B-3H |
| IC1109 | B-3G |
| IC1110 | A-1C |
| IC1301 | A-3A |
| IC1302 | A-3B |
| IC1303 | A-3B |
| IC1304 | B-4G |
| IC1305 | B-4G |
| IC1306 | B-4H |
| IC1307 | B-3G |
| IC1308 | B-3H |
| **JK** | |
| JK200 | B-5A |
| **L** | |
| L101 | A-3C |
| L104 | A-4C |
| L105 | A-4C |
| L107 | A-1D |
| L108 | A-1D |
| L109 | A-1D |
| L110 | A-1D |
| L111 | A-1E |
| L113 | A-1E |
| L114 | A-1E |
| L115 | A-1E |
| L116 | A-1E |
| L117 | A-2E |
| L120 | A-1E |
| L124 | B-2C |
| L125 | A-1F |
| L201 | A-2D |
| L204 | A-2D |
| L205 | B-1E |
| L206 | A-2D |
| L207 | A-2E |
| L208 | A-2E |
| L209 | A-4E |
| L210 | B-3E |
| L211 | A-4E |
| L215 | B-3C |
| L401 | B-4D |
| L402 | B-5D |
| L551 | A-1G |
| L552 | A-2H |
| L553 | A-2G |
| L554 | A-2F |
| L555 | B-2C |
| L556 | A-2H |
| L557 | A-1G |
| L560 | A-1G |
| L563 | A-2F |
| L564 | A-1G |
| L565 | A-1G |
| L566 | B-1C |
| L567 | B-1B |
| L602 | A-5G |
| L901 | A-3H |
| L902 | B-3B |
| L903 | B-2C |
| L904 | A-1F |
| L907 | B-3B |
| L909 | A-3G |
| L910 | A-3H |
| L1102 | B-2F |
| L1103 | B-2F |
| L1105 | B-2F |
| L1106 | B-1H |
| L1107 | B-1F |
| L1108 | B-1F |
| L1109 | B-2G |
| L1301 | B-3F |
| L1302 | B-2F |
| L1303 | B-3F |
| **PG** | |
| PG101 | A-3C |
| PG400 | B-5E |
| PG402 | B-5D |
| PG551 | A-2H |
| PG601 | B-5C |
| PG602 | A-1H |
| PG603 | B-4F |
| PG604 | A-1C |
| PG901 | A-4H |
| PG902 | B-5F |
| PG903 | B-1C |
| PG904 | A-3H |
| PG905 | B-3C |
| PG906 | B-1D |
| PG1101 | A-1B |
| PG1102 | A-4B |
| PG1301 | A-4A |
| **Q** | |
| Q101 | A-3C |
| Q102 | B-3F |
| Q103 | A-3C |
| Q106 | A-3C |
| Q107 | B-3F |
| Q108 | B-3E |
| Q109 | A-4C |
| Q110 | A-4C |
| Q113 | B-1E |
| Q115 | A-1D |
| Q116 | A-1D |
| Q117 | B-1E |
| Q123 | B-1D |
| Q124 | B-1D |
| Q125 | B-1D |
| Q127 | A-2E |
| Q129 | A-1E |
| Q131 | B-2D |
| Q135 | B-2C |
| Q136 | B-3E |
| Q141 | A-4C |
| Q142 | B-4F |
| Q202 | A-2D |
| Q203 | B-2E |
| Q208 | B-1F |
| Q209 | A-2D |
| Q212 | A-4D |
| Q213 | A-4E |
| Q214 | A-4E |
| Q215 | B-3D |
| Q216 | A-3D |
| Q217 | B-3D |
| Q218 | B-3D |
| Q219 | B-3D |
| Q220 | A-3E |
| Q237 | B-2E |
| Q240 | B-2D |
| Q241 | B-2C |
| Q250 | B-3D |
| Q254 | A-4F |
| Q261 | A-3F |
| Q268 | A-3F |
| Q401 | A-5F |
| Q405 | A-4E |
| Q407 | A-5E |
| Q551 | B-2A |
| Q552 | B-1A |
| Q553 | B-1B |
| Q554 | B-2C |
| Q555 | B-1C |
| Q602 | A-5G |
| Q603 | B-5B |

# IDENTIFICATION OF PARTS LOCATION

## MAIN

| Symbol No. | Parts Location |
|---|---|
| Q605 | B-4B |
| Q608 | B-4F |
| Q901 | B-3A |
| Q902 | B-2A |
| Q903 | B-3A |
| Q904 | B-3A |
| Q905 | B-3A |
| Q906 | B-4B |
| Q907 | B-4B |
| Q908 | B-2A |
| Q915 | A-3H |
| Q916 | A-3H |
| Q917 | B-4A |
| Q1100 | B-1H |
| Q1101 | B-3G |
| Q1102 | B-3G |
| Q1103 | B-3F |
| Q1104 | B-3F |
| Q1105 | A-2C |
| Q1106 | B-3G |
| Q1107 | B-3G |
| Q1109 | A-1B |
| Q1110 | B-1F |
| Q1112 | A-1A |
| Q1113 | A-1A |
| Q1114 | A-3B |
| Q1115 | A-3B |
| Q1301 | B-4G |
| **R** | |
| R101 | B-4F |
| R102 | B-4F |
| R103 | B-3F |
| R104 | B-3F |
| R105 | A-3D |
| R106 | B-3F |
| R107 | B-3F |
| R108 | B-3F |
| R109 | B-3F |
| R110 | B-3F |
| R111 | B-3F |
| R112 | B-2F |
| R115 | B-2F |
| R116 | B-2F |
| R118 | B-3F |
| R119 | A-3C |
| R120 | A-3C |
| R121 | A-4C |
| R122 | A-4C |
| R123 | A-4C |
| R124 | A-4C |
| R125 | A-4C |
| R126 | A-3C |
| R134 | B-1E |
| R135 | B-1E |
| R136 | A-1D |
| R137 | B-1E |
| R138 | A-1D |
| R140 | A-1D |
| R141 | B-1E |
| R142 | B-1E |
| R143 | B-1E |
| R144 | B-1E |
| R146 | A-1D |
| R148 | B-1E |
| R149 | B-1E |
| R150 | B-1F |
| R151 | B-1F |
| R152 | B-1D |
| R157 | B-1E |
| R158 | B-1E |
| R160 | B-1E |
| R161 | B-1D |
| R162 | B-1D |
| R163 | B-1D |
| R164 | B-1D |
| R165 | B-1D |
| R166 | B-1D |
| R169 | A-1E |
| R170 | B-1D |
| R172 | B-1D |
| R177 | A-1E |
| R178 | A-1E |
| R179 | A-2E |
| R182 | A-1E |
| R186 | A-1E |
| R189 | B-2D |
| R190 | B-2D |
| R194 | B-2D |
| R195 | B-3F |
| R198 | B-1E |
| R199 | A-1D |
| R200 | A-5H |
| R203 | B-2E |
| R205 | B-3E |
| R206 | A-3F |
| R207 | A-3F |
| R208 | A-2E |
| R213 | A-2D |
| R215 | B-2E |
| R216 | B-2E |
| R217 | B-2E |
| R218 | A-2D |
| R219 | B-2E |
| R223 | B-2F |
| R224 | B-2E |
| R227 | B-2F |
| R228 | B-2F |
| R235 | A-1D |
| R236 | A-2D |
| R237 | A-2D |
| R239 | B-2D |
| R240 | B-2D |
| R241 | B-2D |
| R243 | A-4F |
| R244 | B-2D |
| R246 | B-2D |
| R250 | A-3E |
| R253 | B-2D |
| R254 | B-2D |
| R255 | A-4E |
| R256 | A-4E |
| R257 | A-4E |
| R258 | B-3D |
| R259 | B-3D |
| R260 | B-3D |
| R261 | B-3D |
| R262 | B-3D |
| R263 | B-3D |
| R264 | A-3D |
| R265 | A-3E |
| R269 | B-4D |
| R270 | B-4D |
| R273 | B-3D |
| R274 | B-3D |
| R275 | B-3D |
| R276 | B-3D |
| R277 | B-3D |
| R278 | B-4C |
| R279 | B-3D |
| R280 | B-3D |
| R282 | A-3E |
| R286 | B-3C |
| R287 | B-3D |
| R288 | A-3F |
| R289 | B-3C |
| R291 | A-3F |
| R295 | A-3D |
| R296 | A-2D |
| R298 | B-3D |
| R343 | B-3C |
| R345 | B-3C |
| R351 | B-2E |
| R356 | A-2D |
| R357 | A-3E |
| R361 | A-3F |
| R363 | A-3E |
| R365 | A-3E |
| R366 | A-3E |
| R367 | A-4F |
| R368 | A-4F |
| R369 | A-4F |
| R372 | B-2D |
| R373 | A-3E |
| R374 | B-3D |
| R375 | A-3E |
| R376 | A-3F |
| R377 | A-2D |
| R378 | A-2D |
| R379 | B-1E |
| R383 | A-3F |
| R387 | B-2D |
| R388 | B-2D |
| R391 | A-2E |
| R394 | A-3C |
| R398 | B-3D |
| R401 | B-4C |
| R403 | B-5C |
| R404 | B-5C |
| R405 | B-5C |
| R406 | A-5F |
| R407 | A-5F |
| R408 | B-5C |
| R421 | B-4C |
| R422 | A-4F |
| R424 | B-4C |
| R425 | B-4C |
| R432 | A-4F |
| R433 | A-4F |
| R436 | A-4F |
| R437 | A-5F |
| R441 | A-5D |
| R442 | A-5D |
| R443 | A-5D |
| R444 | A-5E |
| R445 | B-5D |
| R446 | A-5D |
| R447 | A-5E |
| R448 | A-5E |
| R449 | A-5D |
| R450 | A-5E |
| R451 | A-5E |
| R475 | A-5E |
| R476 | A-5E |
| R477 | A-5E |
| R478 | A-5E |
| R479 | A-5E |
| R480 | A-5E |
| R481 | A-4E |
| R489 | B-4C |
| R498 | A-5F |
| R551 | B-1B |
| R552 | B-1B |
| R554 | B-1A |
| R556 | B-1B |
| R558 | B-2A |
| R560 | B-2B |
| R562 | B-2B |
| R563 | B-2B |
| R566 | B-2B |
| R567 | B-2B |
| R568 | B-2B |
| R570 | B-2B |
| R571 | B-1B |
| R572 | B-1B |
| R574 | B-2C |
| R575 | B-2C |
| R576 | B-2C |
| R579 | A-1H |
| R580 | A-1H |
| R581 | B-1A |
| R582 | A-1H |
| R584 | B-1B |
| R585 | B-1B |
| R586 | B-1B |
| R587 | B-1B |
| R588 | B-2B |
| R589 | B-2C |
| R590 | B-1C |
| R591 | B-2C |
| R592 | B-1C |
| R593 | B-2B |
| R594 | B-1A |
| R595 | B-1A |
| R605 | B-4B |
| R606 | B-4B |
| R607 | B-5B |
| R609 | B-5B |
| R610 | B-5B |
| R611 | B-5B |
| R616 | A-5G |
| R620 | A-5H |
| R621 | A-5G |
| R622 | A-5G |
| R623 | A-5H |
| R624 | B-5A |
| R625 | B-5A |
| R626 | B-5A |
| R634 | A-5C |
| R635 | B-4E |
| R637 | B-4F |
| R639 | A-4C |
| R641 | A-4C |
| R643 | A-4C |
| R644 | B-4F |
| R645 | B-4F |
| R646 | B-4F |
| R647 | A-4C |
| R648 | B-5F |
| R649 | A-4C |
| R650 | A-5C |
| R651 | A-5C |
| R652 | A-5C |
| R653 | A-5C |
| R656 | B-1F |
| R658 | B-4F |
| R659 | B-5B |
| R663 | B-4F |
| R668 | A-2H |
| R702 | B-4A |
| R703 | B-4A |
| R704 | B-4A |
| R705 | B-4A |
| R706 | B-4A |
| R707 | B-3A |
| R708 | B-4A |
| R709 | B-4A |
| R710 | B-4A |
| R711 | B-4A |
| R712 | B-4A |
| R713 | B-4B |
| R714 | A-4G |
| R715 | A-4G |
| R717 | B-2F |
| R718 | A-5G |
| R719 | A-5G |
| R721 | B-4A |
| R732 | B-3B |
| R734 | B-3B |
| R736 | B-4B |
| R737 | A-3G |
| R738 | A-4G |
| R739 | A-4G |
| R740 | B-3B |
| R742 | B-2B |
| R743 | B-2B |
| R745 | B-4C |
| R746 | B-3B |
| R747 | A-3G |
| R748 | B-3B |
| R749 | B-5B |
| R750 | B-4A |
| R901 | B-3A |
| R902 | B-2A |
| R903 | B-2A |
| R904 | B-3B |
| R905 | B-3A |
| R907 | B-3A |
| R908 | A-3H |
| R909 | B-2A |
| R910 | A-3H |
| R911 | B-3A |
| R912 | B-3B |
| R913 | B-3B |
| R914 | B-3B |
| R915 | B-3B |
| R916 | A-3H |
| R917 | B-4B |
| R918 | B-4B |
| R919 | B-4B |
| R920 | A-4H |
| R921 | A-4H |
| R926 | B-4C |
| R927 | B-4B |
| R928 | A-4G |
| R929 | B-4B |
| R930 | B-4B |
| R931 | B-4B |
| R933 | B-3A |
| R934 | B-3A |
| R935 | B-3A |
| R936 | B-4B |
| R937 | B-4B |
| R938 | B-4A |
| R939 | A-4H |
| R940 | B-4B |
| R941 | A-3H |
| R942 | B-4B |
| R944 | B-4A |
| R946 | B-5B |
| R947 | B-4B |
| R948 | B-4A |
| R949 | B-4A |
| R950 | B-3B |
| R951 | B-4B |
| R952 | B-2A |
| R953 | B-2A |
| R954 | B-2A |
| R955 | B-3A |
| R956 | B-3A |
| R957 | B-3A |
| R958 | B-4A |
| R959 | B-3B |
| R960 | B-3B |
| R961 | B-4B |
| R962 | B-4B |
| R963 | A-3G |
| R964 | A-4G |
| R965 | A-4G |
| R967 | A-5G |
| R968 | A-4G |
| R970 | B-4B |
| R973 | A-3H |
| R974 | A-3H |
| R975 | A-3H |
| R976 | A-3H |
| R977 | B-4A |
| R978 | B-3B |
| R979 | B-2B |
| R980 | B-2B |
| R983 | B-4A |
| R984 | B-4A |
| R985 | B-4A |
| R986 | A-4H |
| R987 | A-4H |
| R988 | B-4A |
| R989 | A-4H |
| R990 | B-4A |
| R991 | B-4A |
| R994 | B-4A |
| R997 | B-4A |
| R1100 | A-1B |
| R1101 | B-1G |
| R1102 | B-2H |
| R1103 | B-2H |
| R1106 | A-3A |
| R1107 | A-1A |
| R1108 | B-1G |
| R1109 | B-1G |
| R1110 | B-1F |
| R1111 | B-2G |
| R1113 | B-2G |
| R1114 | B-3G |
| R1115 | B-3G |
| R1116 | B-2G |
| R1117 | B-3G |
| R1118 | B-3G |
| R1119 | B-2G |
| R1123 | A-2B |
| R1143 | B-2F |
| R1144 | B-3F |
| R1147 | B-3H |
| R1148 | B-3H |
| R1150 | A-1A |
| R1151 | A-2B |
| R1153 | A-2A |
| R1154 | A-1A |
| R1155 | A-2A |
| R1156 | A-1A |
| R1157 | A-2A |
| R1160 | A-2A |
| R1162 | A-3A |
| R1163 | A-2A |
| R1168 | B-3G |
| R1170 | B-2F |
| R1171 | B-3H |
| R1172 | B-3H |
| R1173 | B-4H |
| R1174 | B-4H |
| R1175 | B-3H |
| R1176 | B-3H |
| R1177 | B-3H |
| R1178 | B-3H |
| R1179 | B-3H |
| R1180 | B-3H |
| R1181 | B-3H |
| R1182 | B-3G |
| R1183 | B-3G |
| R1185 | B-3G |
| R1186 | B-3G |
| R1187 | B-3H |
| R1188 | B-3G |
| R1189 | B-3H |
| R1190 | B-4G |
| R1191 | B-4G |
| R1193 | B-3G |
| R1194 | B-4G |
| R1195 | B-3G |
| R1197 | B-1F |
| R1198 | B-3G |
| R1206 | B-1G |
| R1207 | A-2B |
| R1208 | A-1C |
| R1210 | B-4H |
| R1211 | A-2A |
| R1212 | B-4H |
| R1213 | B-4H |
| R1215 | A-3B |
| R1216 | A-3B |
| R1217 | A-2B |
| R1218 | B-1F |
| R1219 | B-1F |
| R1220 | A-1A |
| R1221 | A-1A |
| R1222 | B-3G |
| R1223 | B-3G |
| R1301 | B-4H |
| R1302 | B-4H |
| R1304 | B-4H |
| R1306 | B-4H |
| R1307 | B-4H |
| R1311 | B-3H |
| R1316 | A-3B |
| R1317 | A-3B |
| R1318 | B-4H |
| R1319 | B-3H |
| R1321 | B-3H |
| R1322 | A-3B |
| R1323 | A-4B |
| R1324 | B-3G |
| R1325 | B-3G |
| R1326 | A-4B |
| **RT** | |
| RT101 | B-1E |
| RT102 | B-1D |
| RT203 | B-3E |
| RT204 | B-2D |
| RT205 | B-2D |
| RT206 | B-2D |
| RT207 | B-3D |
| RT209 | B-2D |
| RT210 | B-3D |
| RT211 | B-3C |
| RT212 | B-4C |
| RT215 | B-3D |
| RT216 | B-3D |
| RT401 | B-4C |
| RT402 | B-4C |
| **S** | |
| S901 | B-1B |
| S902 | B-1A |
| S903 | B-3A |
| S904 | B-2A |
| S905 | B-2A |
| S906 | B-3A |
| S907 | B-4A |
| S909 | B-1A |
| **T** | |
| T551 | A-1F |
| **TL** | |
| TL403 | A-4F |
| TL404 | A-4F |
| TL408 | A-5F |
| TL1175 | B-1F |
| **TP** | |
| TP101 | B-1F |
| TP102 | B-1F |
| TP203 | B-2E |
| TP205 | B-2E |
| TP206 | B-2D |
| **X** | |
| X201 | A-2C |
| X601 | A-5G |
| X901 | A-3G |
| X902 | B-4B |
| X1101 | A-1B |
| **ZD** | |
| ZD901 | B-3A |

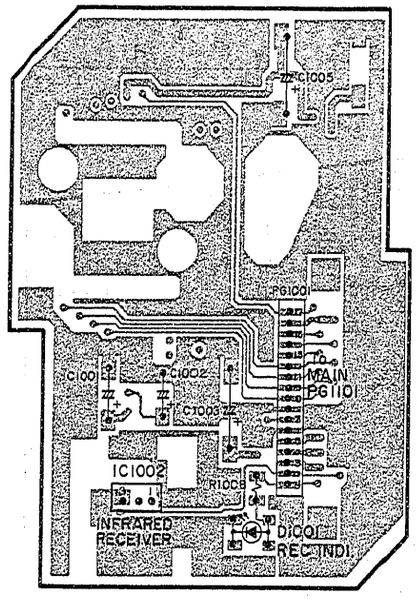
# MAIN CIRCUIT BOARD [SIDE-B]


RT102
REC CHROMA LEVEL
RT101
REC LUMA LEVEL
S901
POWER
VID. ↔ OFF ↔ CAM
S902
EJECT
S909
RESET
S904
PLAY
S905
F.FWD
S906
STOP
S903
REW/
REVIEW
S907
DATE/
TIME
A
B
C
D
E
F
G
H
1
2
3
4
5
D1305
IC401
IC101
IC203
IC204
IC904
JK200
ADJUSTMENT TERMINAL
CYLINDER MOTOR
DEW SENSOR
TO MIC UNIT
MAIN -SIDE B-

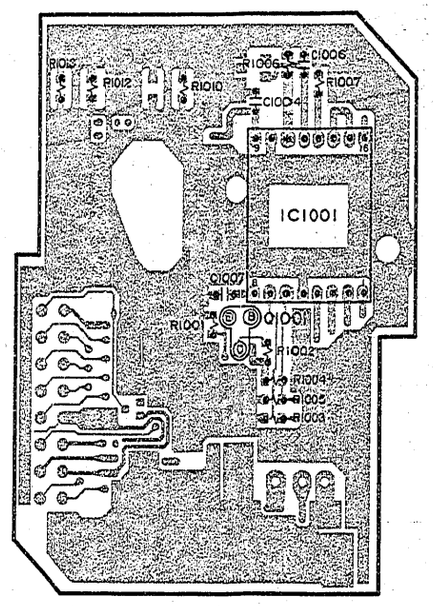
| | |
|---|---|
| RT203 | Fo ADJ. |
| RT204 | E-E LEVEL |
| RT209 | PB LEVEL |
| RT210 | COMB FILTER |
| RT211 | COMB GAIN |
| RT215 | DEVIATION |
| RT216 | WHITE CLIP |
| RT401 | FILTER L |
| RT402 | DEV. L |

NOTE: MARK "Ⓩ" IS LEADLESS (CHIP) JUMPER.
: SOLDER SEMI-VARIABLE RESISTORS TO THE COMPONENTS MARKED "#" WHEN ADJUSTING THEM.

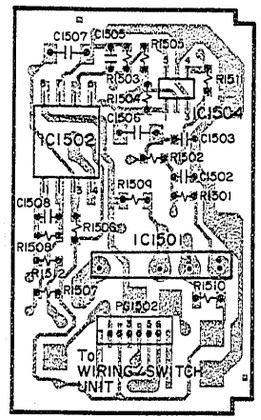
## SENSOR. REC SW/BATT.. TROUBLE SENSOR. H. GYRO. V. GYRO CIRCUIT BOARDS



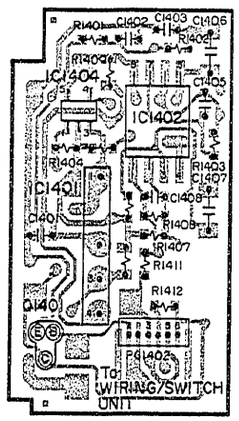

SENSOR —SIDE A—
(PATTERN No.155135-6)



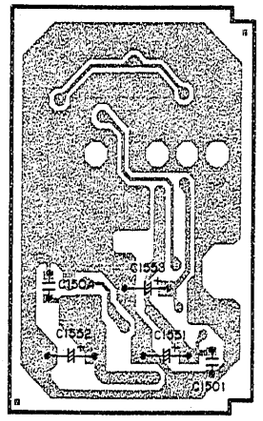

SENSOR —SIDE B—



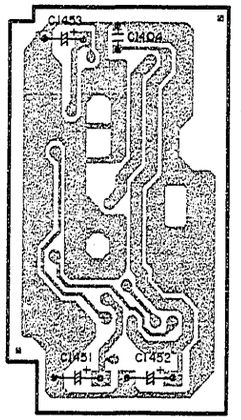

H. GYRO (HTS9558C)
—SIDE A—



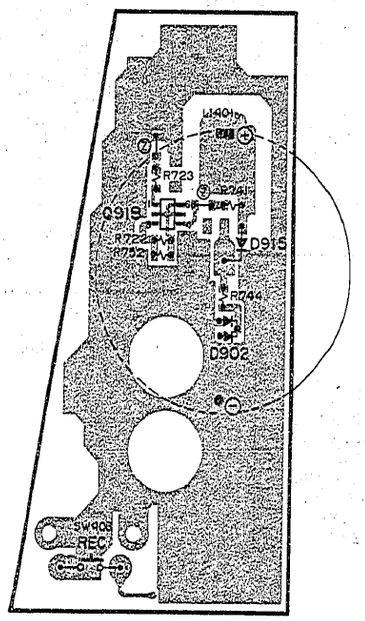

V.GYRO (HTS9557C)
—SIDE A—



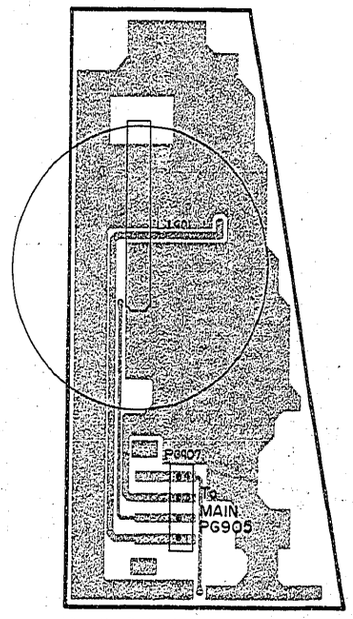

H. GYRO (HTS9558C)
—SIDE B—



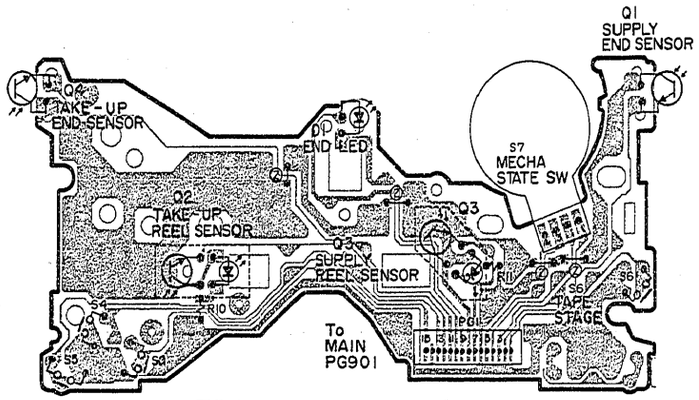

V.GYRO (HTS9557C)
—SIDE B—




REC SW/BATT.-SIDE A-
(PATTERN No. 155135-6)

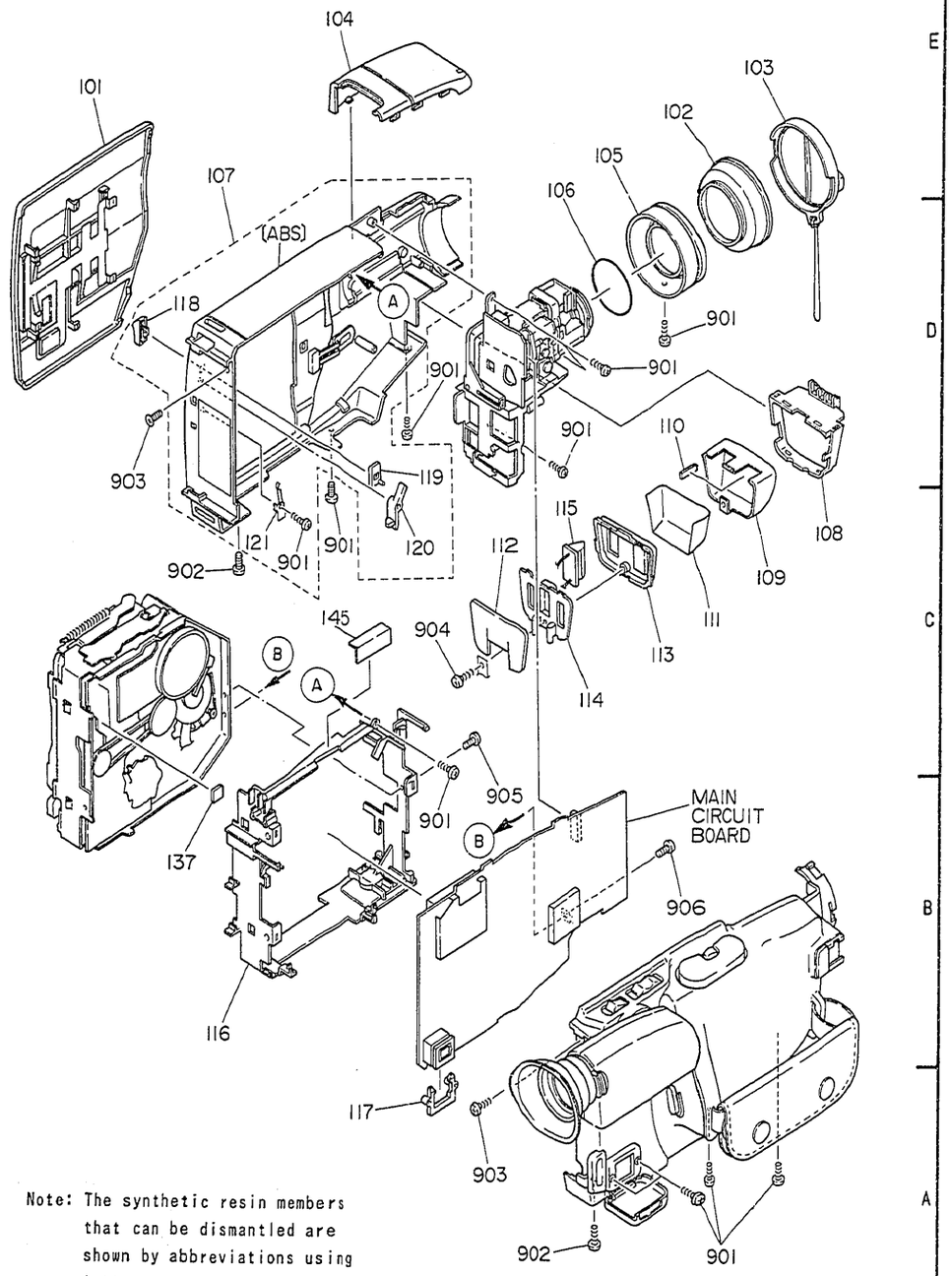



REC SW/BATT.-SIDE B-



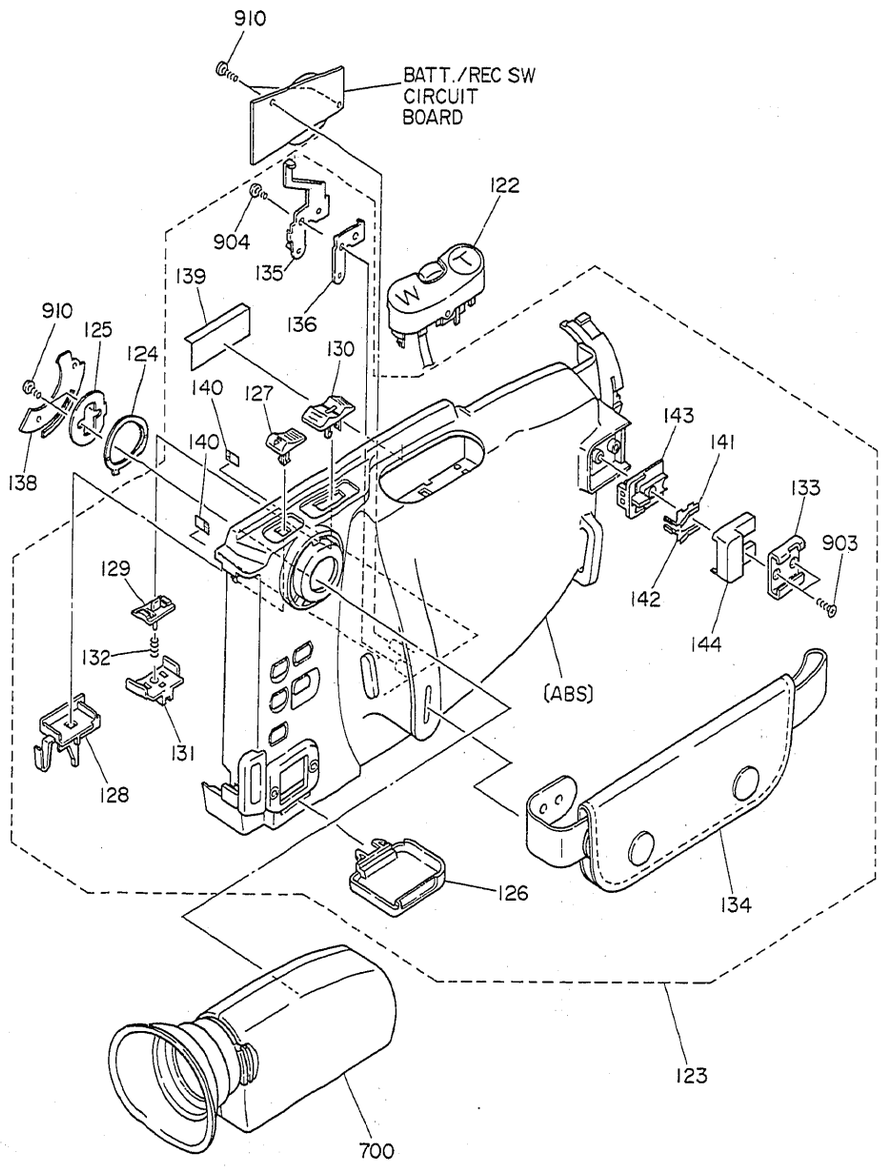

TROUBLE SENSOR (HTS 9551A)

## EXPLODED VIEWS
CABINET SECTION 1 (LEFT CASE SIDE AND VCR BLOCK)




Note: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

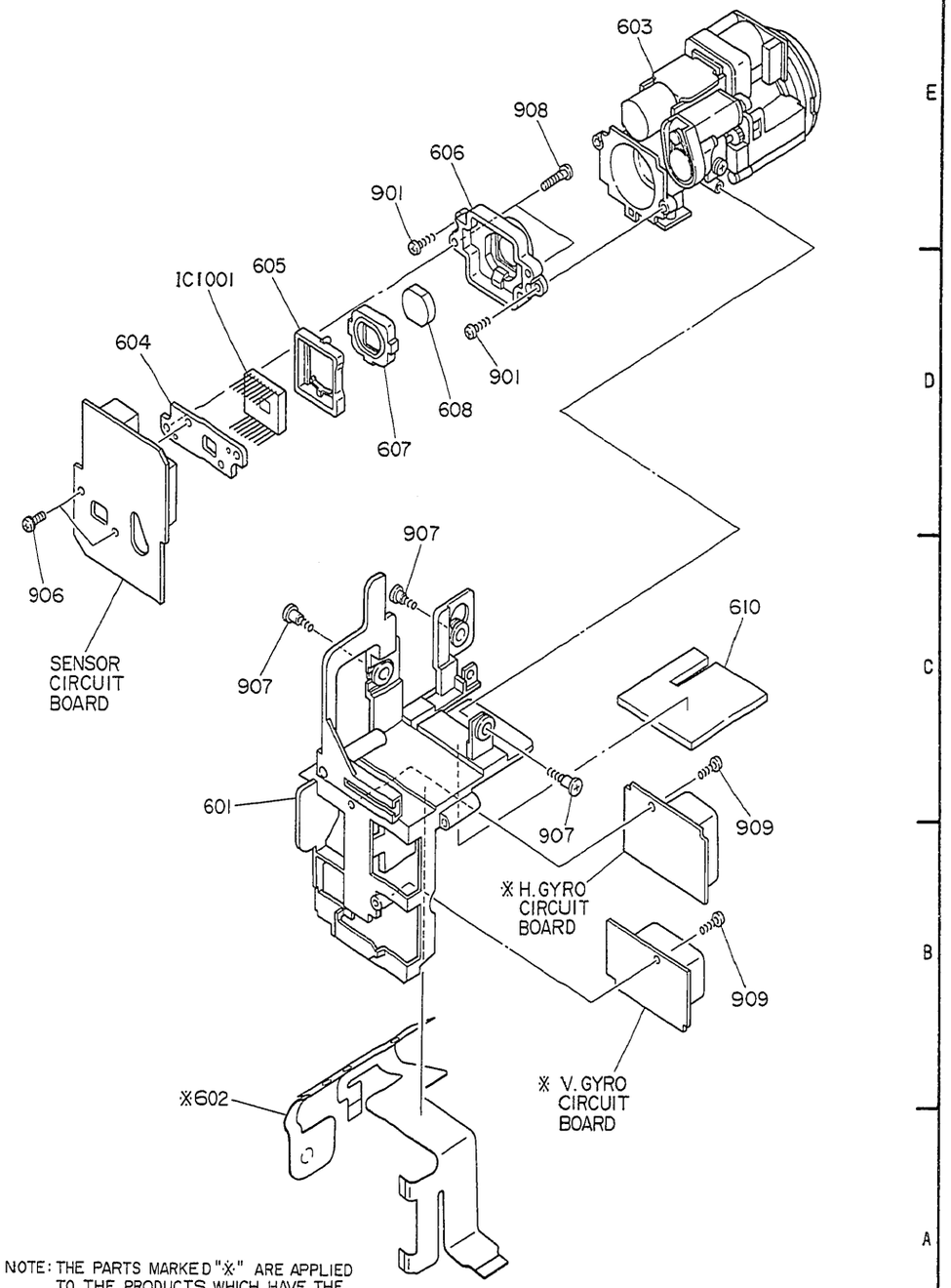
## CABINET SECTION 2 (RIGHT CASE SIDE)




Note: The synthetic resin members that can be dismantled are shown by abbreviations using letters.

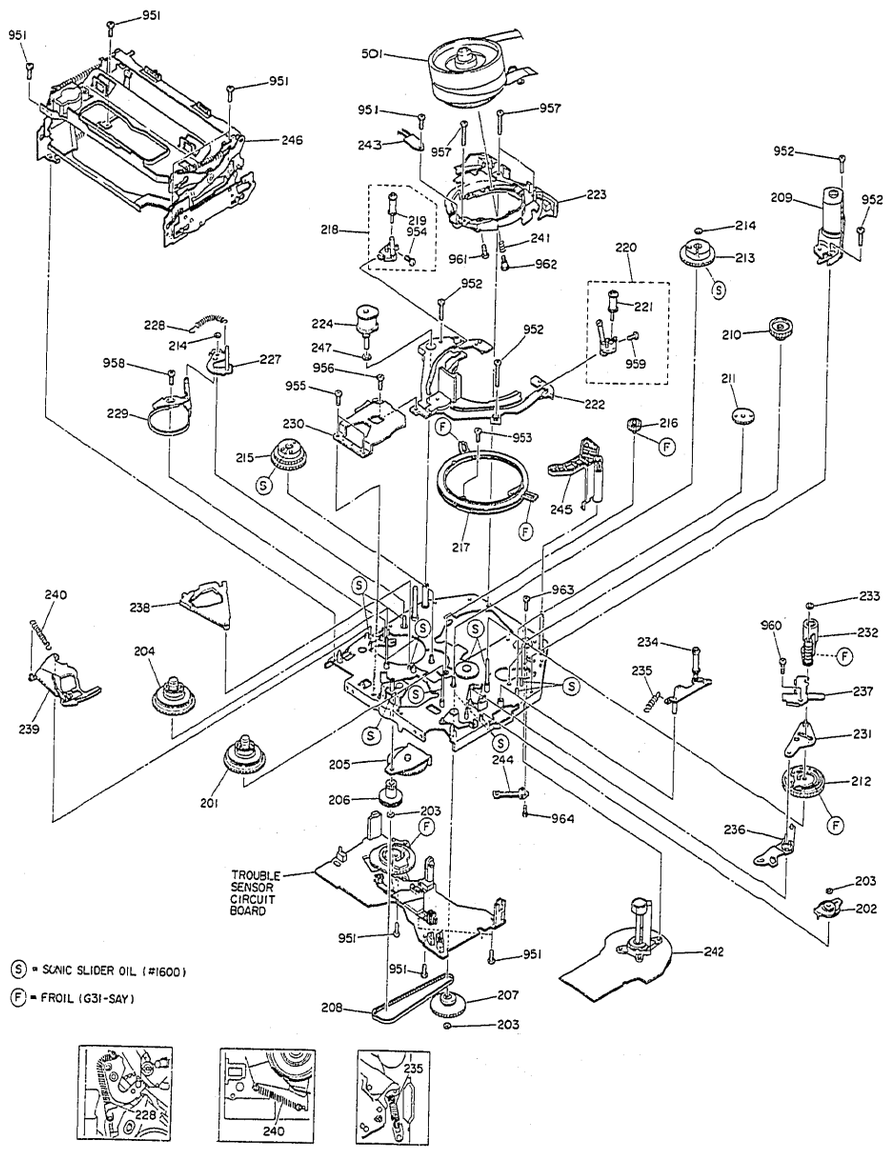


## CAMERA BLOCK SECTION



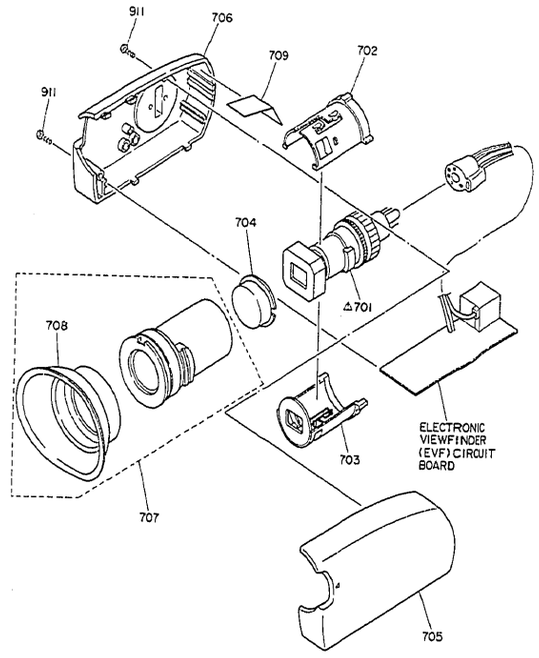

NOTE: THE PARTS MARKED "※" ARE APPLIED TO THE PRODUCTS WHICH HAVE THE EIS FUNCTION.

## CHASSIS SECTION

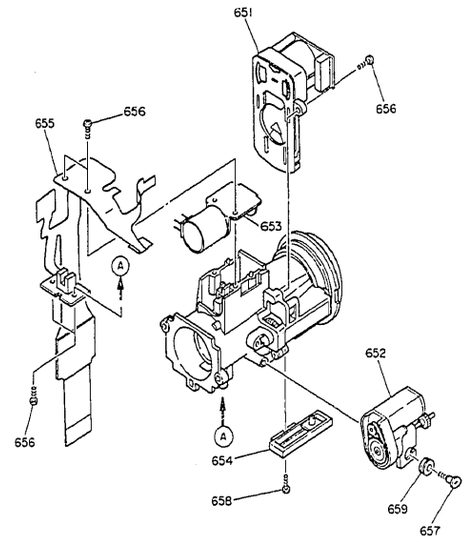




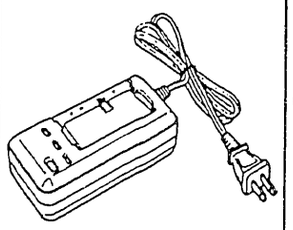
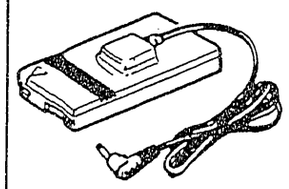
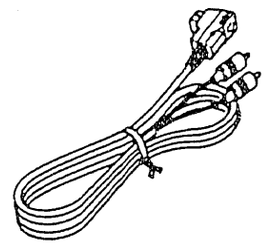
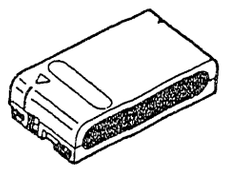
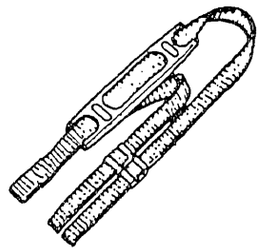
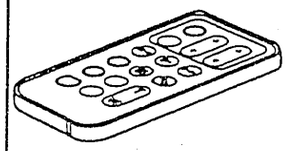

## ELECTRONIC VIEWFINDER (EVF) SECTION




## LENS BLOCK SECTION



ACCESSORIS

| | | |
|---|---|---|
| ⚠802  | 803  | 804  |
| ⚠  | 806  | 807  |





## REPLACEMENT PARTS LIST

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| | | MECHANISM SECTION |
| 101 | 4717391 | LID, CASSETTE (FOR E53A & E53A(PX)) |
| 101 | 4717392 | LID, CASSETTE (FOR E55A) |
| 102 | 4799191 | HOOD, LENS |
| 103 | 4798761 | CAP, FOOD |
| 104 | 4725539 | WINDOW, IR |
| 105 | 4716973 | RING, LENS |
| 106 | 4799291 | RING, LENS |
| 107 | 4717001 | CASE, SIDE(L) (FOR E53A & E53A(PX)) |
| 107 | 4717002 | CASE, SIDE(L) (FOR E55A) |
| 108 | 4716962 | CASE, MICROPHONE |
| 109 | 6680221 | METAL |
| 110 | 6568341 | CUSHION |
| 111 | 4345051 | CUSHION |
| 112 | 6568311 | CUSHION |
| 113 | 6408542 | HOLDER, MICROPHONE |
| 114 | 6408551 | HOLDER, MICROPHONE |
| 115 | 5422701 | MICROPHONE |
| 116 | 6186491 | FRAME, MECHANISM |
| 117 | 6408603 | HOLDER |
| 118 | 4750433 | KNOB, EJECT |
| 119 | 6408591 | HOLDER |
| 120 | 6443182 | LEVER, EJECT |
| 121 | 6529111 | SPRING |
| 122 | 5604851 | SWITCH, T/W |
| 123 | 4716981 | CASE, SIDE(R) |
| 124 | 4899872 | SPRING |
| 125 | 4826122 | BRACKET |
| 126 | 4725552 | COVER, CONNECTOR |
| 127 | 4752071 | KNOB, EJECT |
| 128 | 6408571 | HOLDER |
| 129 | 4750451 | KNOB, POWER |
| 130 | 4752261 | HOLDER, POWER KNOB |
| 131 | 6408581 | HOLDER |
| 132 | 6305733 | SPRING |
| 133 | 7797471 | SHOE |
| 134 | 6336821 | STRAP, HAND |
| 135 | 4826111 | PLATE, STRAP |
| 136 | 4344712 | SHEET |
| 137 | 4592461 | SPACER |
| 138 | 4345032 | SHEET, EVF |
| 139 | 4391831 | SHEET |
| 140 | 4592441 | SPACER |
| 141 | 4590292 | TERMINAL L |
| 142 | 4590302 | TERMINAL R |
| 143 | 4590282 | HOLDER |
| 144 | 4714821 | COVER, TERMINAL |
| 145 | 4345141 | SPACER |
| 201 | 6404061 | REEL DISK, TAKE-UP |
| 202 | 6406112 | GEAR |
| 203 | 7787733 | WASHER |
| 204 | 6404071 | REEL DISK, SUPPLY |
| 205 | 6401643 | GEAR, IDLER |
| 206 | 6406211 | GEAR |
| 207 | 6406032 | GEAR |
| 208 | 6358471 | BELT |
| 209 | 4589112 | LOADING MOTOR BLOCK |
| 210 | 6376311 | GEAR |
| 211 | 6406081 | GEAR |
| 212 | 6406242 | GEAR |
| 213 | 6405832 | GEAR |
| 214 | 7787731 | WASHER |
| 215 | 6405823 | GEAR |
| 216 | 6406131 | GEAR |
| 217 | 4588462 | RING, LOADING |
| 218 | 4589352 | BASE, GUIDE ROLLER(I) |
| 219 | 6424237 | GUIDE ROLLER |
| 220 | 4589362 | BASE, GUIDE ROLLER(O) |
| 221 | 4588903 | GUIDE ROLLER |
| 222 | 4587794 | PLATE |
| 223 | 4589003 | BASE, CYLINDER |
| 224 | 6406151 | IMPEDANCE ROLLER |
| 227 | 45890113 | ARM, TENSION |
| 228 | 6554231 | SPRING |
| 229 | 45885523 | BAND, TENSION |
| 230 | 6408831 | COVER, IDLER |
| 231 | 4826651 | PLATE, CAM |
| 232 | 4588292 | ARM, PRESSURE ROLLER |
| 233 | 7787571 | WASHER |
| 234 | 4588701 | ARM, PULL OUT |
| 235 | 6554201 | SPRING |
| 236 | 4588233 | LEVER |
| 237 | 45885313 | PLATE |
| 238 | 4588425 | PLATE |
| 239 | 4588352 | BRAKE |
| 240 | 6554221 | SPRING |
| 241 | 6554213 | SPRING |
| 242 | 5579651 | MOTOR, CAPSTAN |
| 243 | 0116201 | DEW SENSOR |
| 244 | 5794021 | BRUSH |
| 245 | 4588992 | COVER, TAPE |
| 246 | 4589092 | CASSETTE HOLDER AS |
| 247 | 7789314 | WASHER |
| 501 | 5435741 | CYLINDER ASSY (CY-53C) |
| 601 | 6186591 | FRAME, LENS |
| 602 | 5604871 | SWITCH(FOR E55A) |
| 603 | 6951552 | LENS, ZOOM |
| 604 | 4899861 | PLATE, SENSOR |
| 605 | 6338582 | HOLDER, SENSOR |
| 606 | 6338572 | LID, SENSOR |
| 607 | 6338561 | RUBBER |
| 608 | 5783251 | FILTER |
| 610 | 6568321 | CUSHION |
| 651 | 6951581 | IRIS BLOCK |
| 652 | 6951582 | MOTOR, ZOOM |
| 653 | 6951593 | MOTOR, AUTO FOCUS |
| 654 | 6951584 | SENSOR |
| 655 | 6951591 | CONNECTOR FLEXIBLE |
| 656 | 6951586 | SCREW |
| 657 | 6951592 | SCREW |
| 658 | 6951588 | SCREW |
| 659 | 6951589 | RUBBER |
| 700 | 7055271 | EVF ASSY |
| ⚠701 | 5319061 | CRT |
| 702 | 4715251 | CASE, CRT(U) |
| 703 | 4715241 | CASE, CRT(B) |
| 704 | 4592241 | COVER |
| 705 | 4717316 | CASE, EVF(R) |
| 706 | 4715863 | CASE, EVF(L) |
| 707 | 4715333 | LENS, EVF |
| 708 | 4798482 | CAP, EYE |
| 709 | 4344291 | SPACER |
| 901 | 7775946 | SCREW (2X6) |
| 902 | 7775963 | SCREW(2X3) |
| 903 | 8639106 | SCREW |
| 904 | 86911063 | SCREW (2X6) |
| 905 | 7773891 | SCREW |
| 906 | 8650103 | SCREW(2X3) |

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| 907 | 7773591 | SCREW(2X4) |
| 908 | 7775977 | SCREW(2X7) |
| 909 | 8691105 | SCREW(2X5)(FOR E55A) |
| 910 | 7775945 | SCREW(2X5) |
| 911 | 8619003 | SCREW 1.7X5 |
| 951 | 8712024 | PAN HEAD SCREW-1.4MMDX3MM |
| 952 | 8700272 | SCREW(1.7X5) |
| 953 | 7775921 | SCREW(1.4X2) |
| 954 | 8714004 | SCREW(1.4X2.5) |
| 955 | 8712024 | PAN HEAD SCREW-1.4MMDX3MM |
| 956 | 86190653 | SCREW(1.7X6) |
| 957 | 8700976 | SCREW(1.7X8.0) |
| 958 | 7770791 | SCREW |
| 959 | 8712904 | SCREW(1.4X2.0) |
| 960 | 8619063 | SCREW(1.7X3) |
| 961 | 8711105 | SCREW,2X5 |
| 962 | 7785885 | SCREW |
| 963 | 8700264 | 1.7X2 SCREW |
| 964 | 87411033 | SCREW(2X3) |
| | | ACCESSORIES |
| △802 | 4137811 | AC ADAPTER |
| 803 | 5861832 | CORD,EXTERNAL POWER ADAPTER |
| 804 | 5860783 | CORD,AV OUTPUT |
| 805 | 4135791 | RF CONVERTER |
| 806 | 4131016 | STRAP,SHOULDER |
| 807 | 5616352 | REMOTE HAND SET(FOR E53A(PX)) |
| 807 | 5616581 | REMOTE HAND SET(FOR E53A & E55A) |
| 808 | 4592071 | HOLDER,REMOCON(FOR E53A(PX)) |
| 809 | 7035263 | CARRYING BAG(FOR E53A(PX)) |
| | | VTR SECTION |
| C0101 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0103 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0104 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0105 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0106 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0107 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0108 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0110 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0111 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0112 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0118 | 0893121 | CERAMIC CHIP 39PF+-5% 50V |
| C0119 | 0893119 | CERAMIC CHIP 33PF+-5% 50V |
| C0120 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0121 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0125 | 0893149 | CERAMIC CHIP 12PF+-5% 50V |
| C0126 | 0893158 | CERAMIC CHIP 55PF+-5% 50V |
| C0127 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0128 | 0893167 | CERAMIC CHIP 270PF+-5% 50V |
| C0129 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0130 | 0893159 | CERAMIC CHIP 68PF+-5% 50V |
| C0131 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C0134 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0135 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0137 | 0893004 | CERAMIC CHIP 0.047UF+-10% 16V |
| C0138 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0140 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0141 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0142 | 0202158 | CERAMIC CHIP 75PF+-5% 50V |
| C0143 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0145 | 0893105 | CERAMIC CHIP 3PF+-25% 50V |
| C0146 | 0893215 | CERAMIC CHIP 3300PF+-10% 50V |
| C0147 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0149 | 0893214 | CERAMIC CHIP 2700PF+-10% 50V |
| C0150 | 0202158 | CERAMIC CHIP 75PF+-5% 50V |
| C0151 | 0893121 | CERAMIC CHIP 39PF+-5% 50V |
| C0152 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0153 | 0893167 | CERAMIC CHIP 270PF+-5% 50V |
| C0154 | 0893162 | CERAMIC CHIP 100PF+-5% 50V |
| C0157 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0161 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0163 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0166 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0168 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0169 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0172 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0177 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0203 | 0893102 | CERAMIC CHIP 1.0PF+-0.25% 50V |
| C0204 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0205 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0208 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0209 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0213 | 0893163 | CERAMIC CHIP 120PF+-5% 50V |
| C0214 | 0893059 | CERAMIC CHIP 0.47UF+80-20% 16V |
| C0216 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0218 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0220 | 0893124 | CERAMIC CHIP 68PF+-5% 50V |
| C0223 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0225 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0227 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0229 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0230 | 0893114 | CERAMIC CHIP 12PF+-5% 50V |
| C0232 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0233 | 0893208 | CERAMIC CHIP 1000PF+-10% 50V |
| C0237 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0238 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0241 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0242 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0244 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0246 | 0893162 | CERAMIC CHIP 100PF+-5% 50V |
| C0247 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0249 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0250 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0251 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C0253 | 0893013 | CERAMIC CHIP 0.22UF+-10% 16V |
| C0256 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0257 | 0893166 | CERAMIC CHIP 220PF+-5% 50V |
| C0258 | 0893165 | CERAMIC CHIP 180PF+-5% 50V |
| C0259 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0260 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0262 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0263 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0264 | 0893208 | CERAMIC CHIP 1000PF+-10% 50V |
| C0265 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0267 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0269 | 0893106 | CERAMIC CHIP 4.0PF+-0.25% 50V |
| C0270 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C0271 | 0893152 | CERAMIC CHIP 18PF+-5% 50V |
| C0272 | 0893208 | CERAMIC CHIP 1000PF+-10% 50V |
| C0273 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0276 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0278 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0279 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0280 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0281 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0282 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0283 | 0893161 | CERAMIC CHIP 82PF+-5% 50V |



| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| C0285 | 0893162 | CERAMIC CHIP 100PF+-5% 50V |
| C0287 | 0893166 | CERAMIC CHIP 220PF+-5% 50V |
| C0293 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0296 | 0893163 | CERAMIC CHIP 120PF+-5% 50V |
| C0298 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C0299 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0374 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0375 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0376 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0381 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0390 | 0893004 | CERAMIC CHIP 0.047UF+-10% 16V |
| C0391 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0394 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0400 | 0893208 | CERAMIC CHIP 1000PF+-10% 50V |
| C0401 | 0893153 | CERAMIC CHIP 22PF+-5% 50V |
| C0403 | 0893175 | CERAMIC CHIP 1000PF+-5% 50V |
| C0405 | 0893175 | CERAMIC CHIP 1000PF+-5% 50V |
| C0406 | 0893059 | CERAMIC CHIP 0.47UF+80-20% 16V |
| C0407 | 0893035 | CERAMIC CHIP 2200PF+-10% 50V |
| C0408 | 0893033 | CERAMIC CHIP 1500PF+-10% 50V |
| C0412 | 0893175 | CERAMIC CHIP 1000PF+-5% 50V |
| C0413 | 0893175 | CERAMIC CHIP 1000PF+-5% 50V |
| C0414 | 0893059 | CERAMIC CHIP 0.47UF+80-20% 16V |
| C0415 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0416 | 0893171 | CERAMIC CHIP 470PF+-5% 50V |
| C0417 | 0893215 | CERAMIC CHIP 3300PF+-10% 50V |
| C0419 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0420 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0421 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0422 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0427 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0445 | 0893166 | CERAMIC CHIP 220PF+-5% 50V |
| C0448 | 0893197 | CERAMIC CHIP 0.022UF+-10% 25V |
| C0449 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0450 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0451 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0452 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0453 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0466 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0467 | 0893186 | CERAMIC CHIP 0.033UF+-10% 16V |
| C0469 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0470 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0471 | 0893189 | CERAMIC CHIP 0.0056UF+-10% 25V |
| C0472 | 0893184 | CERAMIC CHIP 0.022UF+-10% 16V |
| C0473 | 0893184 | CERAMIC CHIP 0.022UF+-10% 16V |
| C0474 | 0893242 | CERAMIC CHIP 0.022UF+80-20% 50V |
| C0475 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0476 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0477 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0491 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0492 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0495 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0496 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0551 | 0893155 | CERAMIC CHIP 33PF+-5% 50V |
| C0552 | 0893217 | CERAMIC CHIP 4700PF+-10% 50V |
| C0553 | 0893014 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0554 | 0893014 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0555 | 0209942 | CERAMIC CHIP 100PF+-5% 50V |
| C0556 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0558 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0559 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0560 | 0893202 | CERAMIC CHIP 330PF+-10% 50V |
| C0562 | 0893203 | CERAMIC CHIP 390PF+-10% 50V |
| C0563 | 0893158 | CERAMIC CHIP 56PF+-5% 50V |
| C0564 | 0893202 | CERAMIC CHIP 330PF+-10% 50V |
| C0565 | 0893155 | CERAMIC CHIP 33PF+-5% 50V |
| C0573 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0579 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0586 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0587 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0588 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0589 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0591 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0592 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0594 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0605 | 0893206 | CERAMIC CHIP 680PF+-10% 50V |
| C0607 | 0893199 | CERAMIC CHIP 220PF+-10% 50V |
| C0609 | 0893206 | CERAMIC CHIP 680PF+-10% 50V |
| C0611 | 0893202 | CERAMIC CHIP 330PF+-10% 50V |
| C0618 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0619 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0620 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0621 | 0893122 | CERAMIC CHIP 47PF+-5% 50V |
| C0622 | 0893184 | CERAMIC CHIP 0.022UF+-10% 16V |
| C0623 | 0893184 | CERAMIC CHIP 0.022UF+-10% 16V |
| C0624 | 0893184 | CERAMIC CHIP 0.022UF+-10% 16V |
| C0630 | 0893186 | CERAMIC CHIP 0.033UF+-10% 16V |
| C0631 | 0893186 | CERAMIC CHIP 0.033UF+-10% 16V |
| C0632 | 0893186 | CERAMIC CHIP 0.033UF+-10% 16V |
| C0634 | 0893188 | CERAMIC CHIP 0.047UF+-10% 16V |
| C0639 | 0893011 | CERAMIC CHIP 0.15UF+-10% 16V |
| C0641 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C0642 | 0893182 | CERAMIC CHIP 0.015UF+-10% 16V |
| C0643 | 0893182 | CERAMIC CHIP 0.015UF+-10% 16V |
| C0644 | 0893182 | CERAMIC CHIP 0.015UF+-10% 16V |
| C0645 | 0893182 | CERAMIC CHIP 0.015UF+-10% 16V |
| C0649 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0650 | 0893055 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0652 | 0893202 | CERAMIC CHIP 330PF+-10% 50V |
| C0653 | 0893204 | CERAMIC CHIP 470PF+-10% 50V |
| C0902 | 0893059 | CERAMIC CHIP 0.47UF+80-20% 16V |
| C0903 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0904 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0908 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0910 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0912 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0913 | 0893175 | CERAMIC CHIP 1000PF+-5% 50V |
| C0919 | 0893115 | CERAMIC CHIP 15PF+-5% 50V |
| C0920 | 0893115 | CERAMIC CHIP 15PF+-5% 50V |
| C0921 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0922 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0923 | 0893118 | CERAMIC CHIP 27PF+-5% 50V |
| C0924 | 0893118 | CERAMIC CHIP 27PF+-5% 50V |
| C0926 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0928 | 0893119 | CERAMIC CHIP 33PF+-5% 50V |
| C0929 | 0893126 | CERAMIC CHIP 100PF+-5% 50V |
| C0930 | 0893131 | CERAMIC CHIP 220PF+-5% 50V |
| C0933 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0934 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0935 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0936 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0937 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C0942 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0947 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C0948 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0949 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0951 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C0952 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0953 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C0956 | 0893162 | CERAMIC CHIP 100PF+-5% 50V |

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| C1101 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C1102 | 0893008 | CERAMIC CHIP 0.1UF +-10% 16V |
| C1103 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1105 | 0893014 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1106 | 0893027 | CERAMIC CHIP 0.1UF+-10% 25V |
| C1107 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1109 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1111 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1112 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1113 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1114 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1115 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1116 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1117 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1118 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1120 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1121 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1122 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1123 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1124 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1125 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1126 | 0893116 | CERAMIC CHIP 18PF+-5% 50V |
| C1127 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C1133 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1143 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1144 | 0893227 | CERAMIC CHIP 0.22UF+80-20% 16V |
| C1145 | 0893227 | CERAMIC CHIP 0.22UF+80-20% 16V |
| C1146 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1148 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1149 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V(E55A) |
| C1151 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1152 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V(E55A) |
| C1153 | 0893133 | CERAMIC CHIP 330PF+-5% 50V |
| C1154 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1156 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1157 | 0893118 | CERAMIC CHIP 27PF+-5% 50V |
| C1158 | 0893133 | CERAMIC CHIP 330PF+-5% 50V |
| C1159 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1161 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1162 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1163 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1164 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1165 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V(E55A) |
| C1166 | 0893227 | CERAMIC CHIP 0.22UF+80-20% 16V |
| C1167 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1168 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1169 | 0893117 | CERAMIC CHIP 22PF+-5% 50V |
| C1170 | 0893131 | CERAMIC CHIP 220PF+-5% 50V |
| C1171 | 0893059 | CERAMIC CHIP 0.47UF+80-20% 16V |
| C1172 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1174 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1175 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1176 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1177 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1179 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1180 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1181 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1185 | 0893116 | CERAMIC CHIP 18PF+-5% 50V |
| C1186 | 0893128 | CERAMIC CHIP 150PF+-5% 50V |
| C1187 | 0893128 | CERAMIC CHIP 150PF+-5% 50V |
| C1189 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1190 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1192 | 0893225 | CERAMIC CHIP 0.1UF+80-20% 16V |
| C1193 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1302 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1303 | 0893188 | CERAMIC CHIP 0.047UF+-10% 16V |
| C1304 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1306 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1309 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1311 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1312 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1316 | 0893188 | CERAMIC CHIP 0.047UF+-10% 16V |
| C1317 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1318 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1319 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1325 | 0893227 | CERAMIC CHIP 0.22UF+80-20% 16V |
| C1326 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| C1327 | 0893227 | CERAMIC CHIP 0.22UF+80-20% 16V |
| C1328 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1329 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1330 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1331 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1332 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1333 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1334 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1335 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1336 | 0893215 | CERAMIC CHIP 3300PF+-10% 50V |
| C1337 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1338 | 0893193 | CERAMIC CHIP 0.01UF+-10% 25V |
| C1339 | 0893119 | CERAMIC CHIP 33PF+-5% 50V |
| R0010 | 0103930 3 | CHIP RESISTOR 390OHM+-5% 1/8W |
| R0011 | 0103838 | CHIP RESISTOR 390OHM+-5% 0.1W |
| R0101 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R0102 | 0790007 | CHIP RESISTOR 5.6 OHM+-5% 1/16W |
| R0103 | 0790007 | CHIP RESISTOR 5.6 OHM+-5% 1/16W |
| R0104 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R0105 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R0106 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0107 | 0790054 | CHIP RESISTOR 18KOHM+-5% 1/16W |
| R0108 | 0790044 | CHIP RESISTOR 3.3KOHM+-5% 1/16W |
| R0109 | 0790036 | CHIP RESISTOR 820 OHM+-5% 1/16W |
| R0110 | 0790075 | CHIP RESISTOR 820KOHM+-5% 1/16W |
| R0111 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0112 | 0790028 | CHIP RESISTOR 220 OHM+-5% 1/16W |
| R0115 | 0790025 | CHIP RESISTOR 150 OHM+-5% 1/16W |
| R0116 | 0790026 | CHIP RESISTOR 150 OHM+-5% 1/16W |
| R0118 | 0790026 | CHIP RESISTOR 150 OHM+-5% 1/16W |
| R0119 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0120 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0121 | 0790008 | CHIP RESISTOR 6.8 OHM+-5% 1/16W |
| R0122 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R0123 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0124 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0125 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0126 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0134 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0135 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0136 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0137 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0138 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0140 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R0141 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0142 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0143 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0144 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0146 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0148 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0149 | 0790054 | CHIP RESISTOR 18KOHM+-5% 1/16W |
| R0150 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R0151 | 0790045 | CHIP RESISTOR 3.9KOHM+-5% 1/16W |



| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| R0152 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R0157 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0158 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0160 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0161 | 0790029 | CHIP RESISTOR 270 OHM+-5% 1/16W |
| R0162 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0163 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0164 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R0165 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0166 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0169 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R0170 | 0790027 | CHIP RESISTOR 180 OHM+-5% 1/16W |
| R0172 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0177 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0178 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R0179 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0182 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0186 | 0790028 | CHIP RESISTOR 220 OHM+-5% 1/16W |
| R0189 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0190 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0194 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0195 | 0790027 | CHIP RESISTOR 180 OHM+-5% 1/16W |
| R0198 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0199 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0200 | 0104093 | CHIP RESISTOR 75 OHM+-5% 1/16W |
| R0203 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R0205 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0206 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0207 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0208 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R0213 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0215 | 0790054 | CHIP RESISTOR 18KOHM+-5% 1/16W |
| R0216 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R0217 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0218 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0219 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0223 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0224 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0227 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0228 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0235 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R0236 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0237 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0239 | 0790029 | CHIP RESISTOR 270 OHM+-5% 1/16W |
| R0240 | 0790054 | CHIP RESISTOR 18KOHM+-5% 1/16W |
| R0241 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0244 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0246 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0250 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R0253 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0254 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R0255 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0256 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0257 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0258 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0259 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R0260 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0261 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0262 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R0263 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R0264 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0265 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R0269 | 0790025 | CHIP RESISTOR 120 OHM+-5% 1/16W |
| R0270 | 0790063 | CHIP RESISTOR 82KOHM+-5% 1/16W |
| R0273 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0274 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R0275 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0276 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0277 | 0790029 | CHIP RESISTOR 270 OHM+-5% 1/16W |
| R0278 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0279 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0280 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0282 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R0286 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0287 | 0790068 | CHIP RESISTOR 220KOHM+-5% 1/16W |
| R0288 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R0289 | 0104093 | CHIP RESISTOR 75 OHM+-5% 1/16W |
| R0291 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0295 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0296 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R0298 | 0790045 | CHIP RESISTOR 3.9KOHM+-5% 1/16W |
| R0343 | 0104529 | CHIP RESISTOR 11KOHM+-1% 1/16W |
| R0345 | 0790049 | CHIP RESISTOR 8.2KOHM+-5% 1/16W |
| R0351 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0356 | 0790069 | CHIP RESISTOR 0.27MOHM+-5% 1/16W |
| R0357 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0361 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0363 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R0365 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R0366 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R0367 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R0368 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R0369 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R0372 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0373 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0374 | 0790056 | CHIP RESISTOR 27KOHM+-5% 1/16W |
| R0375 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0376 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0377 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0378 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0379 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0383 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R0387 | 0790036 | CHIP RESISTOR 820 OHM+-5% 1/16W |
| R0388 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0391 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0394 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0398 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0401 | 0103855 | CHIP RESISTOR 10KOHM+-5% 0.1W |
| R0403 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0404 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0405 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R0406 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R0407 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R0408 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0421 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0422 | 0790036 | CHIP RESISTOR 820 OHM+-5% 1/16W |
| R0423 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0424 | 0790066 | CHIP RESISTOR 150KOHM+-5% 1/16W |
| R0425 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R0432 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0433 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0436 | 0790028 | CHIP RESISTOR 220 OHM+-5% 1/16W |
| R0437 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R0441 | 0790049 | CHIP RESISTOR 8.2KOHM+-5% 1/16W |
| R0442 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0443 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0444 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R0445 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0446 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0447 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| R0448 | 0790066 | CHIP RESISTOR 150KOHM+-5% 1/16W |
| R0449 | 0790066 | CHIP RESISTOR 150KOHM+-5% 1/16W |
| R0450 | 0790066 | CHIP RESISTOR 150KOHM+-5% 1/16W |
| R0451 | 0790075 | CHIP RESISTOR 680KOHM+-5% 1/16W |
| R0475 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0476 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0477 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0478 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0479 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0480 | 0790026 | CHIP RESISTOR 150 OHM+-5% 1/16W |
| R0481 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0489 | 0790065 | CHIP RESISTOR 120KOHM+-5% 1/16W |
| R0493 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0498 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0551 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R0552 | 0790074 | CHIP RESISTOR 560KOHM+-5% 1/16W |
| R0554 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0556 | 0790074 | CHIP RESISTOR 560KOHM+-5% 1/16W |
| R0558 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0560 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0562 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R0563 | 0790056 | CHIP RESISTOR 27KOHM+-5% 1/16W |
| R0566 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0567 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0568 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0570 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0571 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R0572 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R0574 | 0104301 | CHIP RESISTOR 4.7KOHM+-0.5% 1/16W |
| R0575 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0576 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0579 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0580 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0581 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0582 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R0584 | 0104115 | CHIP RESISTOR 3.9KOHM 1/10W |
| R0585 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0586 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0587 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0588 | 0104304 | CHIP RESISTOR 22KOHM+-0.5% 1/16W |
| R0589 | 0104303 | CHIP RESISTOR 12KOHM+-0.5% 1/16W |
| R0590 | 0104302 | CHIP RESISTOR 5.6KOHM+-0.5% 1/16W |
| R0591 | 0790065 | CHIP RESISTOR 120KOHM+-5% 1/16W |
| R0592 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0593 | 0790075 | CHIP RESISTOR 680KOHM+-5% 1/16W |
| R0594 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0595 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0605 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0606 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0607 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0609 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0610 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0611 | 0790062 | CHIP RESISTOR 68KOHM+-5% 1/16W |
| R0616 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0620 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0621 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0622 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0623 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0624 | 0790049 | CHIP RESISTOR 8.2KOHM+-5% 1/16W |
| R0625 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R0626 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0634 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R0635 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0637 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0639 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0641 | 0790072 | CHIP RESISTOR 390KOHM+-5% 1/16W |
| R0643 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R0644 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0645 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0646 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0647 | 0790052 | CHIP RESISTOR 12KOHM+-5% 1/16W |
| R0648 | 0790019 | CHIP RESISTOR 47 OHM+-5% 1/16W |
| R0649 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R0650 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R0651 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R0652 | 0104246 | CHIP RESISTOR 1.0 OHM+-5% 1/10W |
| R0653 | 0104246 | CHIP RESISTOR 1.0 OHM+-5% 1/10W |
| R0656 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0658 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0659 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0663 | 0790019 | CHIP RESISTOR 47 OHM+-5% 1/16W |
| R0668 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0702 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0703 | 0790026 | CHIP RESISTOR 150 OHM+-5% 1/16W |
| R0704 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0705 | 0104562 | CHIP RESISTOR 39KOHM+-1% 1/16W |
| R0706 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0707 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0708 | 0104503 | CHIP RESISTOR 27KOHM+-1% 1/16W |
| R0709 | 0104562 | CHIP RESISTOR 39KOHM+-1% 1/16W |
| R0710 | 0104503 | CHIP RESISTOR 27KOHM+-1% 1/16W |
| R0711 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0712 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0713 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0714 | 0790066 | CHIP RESISTOR 150KOHM+-5% 1/16W |
| R0715 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0717 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R0718 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0719 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0721 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0722 | 0104542 | CHIP RESISTOR 10KOHM+-1% 1/16W |
| R0723 | 0104503 | CHIP RESISTOR 27KOHM+-1% 1/16W |
| R0732 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0734 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0736 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0737 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0738 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0739 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0740 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0741 | 0790027 | CHIP RESISTOR 180OHM+-5% 1/16W |
| R0742 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0743 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0744 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0745 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0746 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0747 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0748 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0749 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0750 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0751 | 0790075 | CHIP RESISTOR 680KOHM+-5% 1/16W |
| R0752 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0901 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0902 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0903 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0904 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0905 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0907 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0908 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0909 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R0910 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |



| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| R0911 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0912 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0913 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0914 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0915 | 0790073 | CHIP RESISTOR 470KOHM+-5% 1/16W |
| R0916 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0917 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0918 | 0790068 | CHIP RESISTOR 220KOHM+-5% 1/16W |
| R0919 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0920 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0921 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0926 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0929 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0930 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0931 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R0933 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0934 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0935 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0936 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0937 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0938 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0939 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0940 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0941 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0942 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0944 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0947 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0948 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0949 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0950 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0951 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R0952 | 0790044 | CHIP RESISTOR 3.3KOHM+-5% 1/16W |
| R0953 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R0954 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R0955 | 0790049 | CHIP RESISTOR 8.2KOHM+-5% 1/16W |
| R0956 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R0957 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0958 | 0790036 | CHIP RESISTOR 820 OHM+-5% 1/16W |
| R0959 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0960 | 0104111 | METAL FILM 10KOHM+-1% 1/10W |
| R0961 | 0104111 | METAL FILM 10KOHM+-1% 1/10W |
| R0962 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R0963 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0964 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0965 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0967 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0968 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0970 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R0973 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0974 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0975 | 0103833 | CHIP RESISTOR 150 OHM+-5% 0.1W |
| R0976 | 0103833 | CHIP RESISTOR 150 OHM+-5% 0.1W |
| R0977 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R0978 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0979 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R0980 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R0983 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0984 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0985 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0986 | 0790073 | CHIP RESISTOR 470KOHM+-5% 1/16W |
| R0987 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0988 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0989 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R0990 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R0991 | 0790073 | CHIP RESISTOR 470KOHM+-5% 1/16W |
| R0994 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R0997 | 0790039 | CHIP RESISTOR 1.5KOHM+-5% 1/16W |
| R1100 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R1101 | 0790064 | CHIP RESISTOR 100KOHM+-5% 1/16W |
| R1102 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R1103 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1106 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R1107 | 0790028 | CHIP RESISTOR 220 OHM+-5% 1/16W |
| R1108 | 0790027 | CHIP RESISTOR 180 OHM+-5% 1/16W |
| R1109 | 0790027 | CHIP RESISTOR 180 OHM+-5% 1/16W |
| R1110 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R1111 | 0104521 | CHIP RESISTOR 4.12KOHM+-1% 1/16W |
| R1113 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R1114 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R1115 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R1116 | 0104545 | CHIP RESISTOR 1.24KOHM+-1% 1/16W |
| R1117 | 0104554 | CHIP RESISTOR 1KOHM+-1% 1/16W |
| R1118 | 0790037 | CHIP RESISTOR 1KOHM+-5% 1/16W |
| R1119 | 0104558 | CHIP RESISTOR 5.6KOHM+-1% 1/16W |
| R1123 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R1143 | 0790036 | CHIP RESISTOR 820 OHM+-5% 1/16W |
| R1144 | 0790045 | CHIP RESISTOR 3.9KOHM+-5% 1/16W |
| R1147 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R1148 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R1150 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R1151 | 0790049 | CHIP RESISTOR 8.2KOHM+-5% 1/16W |
| R1153 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R1154 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R1155 | 0790034 | CHIP RESISTOR 560 OHM+-5% 1/16W |
| R1156 | 0104585 | CHIP RESISTOR 100KOHM+-5% 1/32W |
| R1157 | 0104581 | CHIP RESISTOR 1KOHM+-5% 1/32W |
| R1160 | 0790056 | CHIP RESISTOR 27KOHM+-5% 1/16W |
| R1162 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R1163 | 0104581 | CHIP RESISTOR 1KOHM+-5% 1/32W |
| R1168 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R1170 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W |
| R1171 | 0790065 | CHIP RESISTOR 120KOHM+-5% 1/16W |
| R1172 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R1173 | 0790065 | CHIP RESISTOR 120KOHM+-5% 1/16W |
| R1174 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R1175 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R1176 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R1177 | 0790053 | CHIP RESISTOR 15KOHM+-5% 1/16W |
| R1178 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R1179 | 0790061 | CHIP RESISTOR 56KOHM+-5% 1/16W |
| R1180 | 0790068 | CHIP RESISTOR 220KOHM+-5% 1/16W |
| R1181 | 0790057 | CHIP RESISTOR 33KOHM+-5% 1/16W |
| R1182 | 0790069 | CHIP RESISTOR 0.27MOHM+-5% 1/16W |
| R1183 | 0790058 | CHIP RESISTOR 39KOHM+-5% 1/16W |
| R1185 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R1186 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R1187 | 0790047 | CHIP RESISTOR 5.6KOHM+-5% 1/16W |
| R1188 | 0790041 | CHIP RESISTOR 1.8KOHM+-5% 1/16W |
| R1189 | 0790031 | CHIP RESISTOR 330 OHM+-5% 1/16W |
| R1190 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R1191 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R1193 | 0790033 | CHIP RESISTOR 470 OHM+-5% 1/16W |
| R1194 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R1195 | 0790046 | CHIP RESISTOR 4.7KOHM+-5% 1/16W |
| R1197 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R1198 | 0790043 | CHIP RESISTOR 2.7KOHM+-5% 1/16W |
| R1206 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R1207 | 0790042 | CHIP RESISTOR 2.2KOHM+-5% 1/16W |
| R1208 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R1210 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W(E55A) |

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| R1211 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1212 | 0790059 | CHIP RESISTOR 47KOHM+-5% 1/16W(E55A) |
| R1213 | 0790063 | CHIP RESISTOR 82KOHM+-5% 1/16W(E55A) |
| R1215 | 0790044 | CHIP RESISTOR 3.3KOHM+-5% 1/16W(E55A) |
| R1216 | 0790044 | CHIP RESISTOR 3.3KOHM+-5% 1/16W(E55A) |
| R1217 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R1218 | 0104503 | CHIP RESISTOR 27KOHM+-1% 1/16W |
| R1219 | 0104537 | CHIP RESISTOR 3.6KOHM+-1% 1/16W |
| R1220 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1221 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1222 | 0104561 | METAL FILM 18KOHM+-1% 16W(E55A) |
| R1223 | 0104564 | CHIP RESISTOR 18.7KOHM+-1% 1/16W(E55A) |
| R1301 | 0104537 | CHIP RESISTOR 3.6KOHM+-1% 1/16W |
| R1302 | 0104524 | CHIP RESISTOR 5.49KOHM+-1% 1/16W |
| R1304 | 0790038 | CHIP RESISTOR 1.2KOHM+-5% 1/16W |
| R1306 | 0105193 | CHIP RESISTOR 1.8KOHM+-0.5% 1/16W |
| R1307 | 0105198 | CHIP RESISTOR 30KOHM+-0.5% 1/16W |
| R1311 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1316 | 0790005 | CHIP RESISTOR 3.9 OHM+-5% 1/16W |
| R1317 | 0790005 | CHIP RESISTOR 3.9 OHM+-5% 1/16W |
| R1318 | 0790032 | CHIP RESISTOR 390 OHM+-5% 1/16W |
| R1319 | 0104559 | CHIP RESISTOR 4.7KOHM+-1% 1/16W |
| R1321 | 0104559 | CHIP RESISTOR 4.7KOHM+-1% 1/16W |
| R1322 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R1323 | 0790051 | CHIP RESISTOR 10KOHM+-5% 1/16W |
| R1324 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1325 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| R1326 | 0790055 | CHIP RESISTOR 22KOHM+-5% 1/16W |
| RT0101 | 5040163 | TRIMMER |
| RT0102 | 5040161 | SEMI VARIABLE 2.2KOHM |
| RT0203 | 5040204 | SEMI VARIABLE 10KOHM |
| RT0204 | 5040204 | SEMI VARIABLE 10KOHM |
| RT0205 | 5040203 | SEMI VARIABLE 4.7KOHM |
| RT0206 | 5040203 | SEMI VARIABLE 4.7KOHM |
| RT0207 | 5040204 | SEMI VARIABLE 10KOHM |
| RT0209 | 5040204 | SEMI VARIABLE 10KOHM |
| RT0210 | 5040201 | SEMI VARIABLE 470OHM |
| RT0211 | 5040203 | SEMI VARIABLE 4.7KOHM |
| RT0212 | 5040202 | SEMI VARIABLE 2.2KOHM |
| RT0215 | 5040204 | SEMI VARIABLE 10KOHM |
| RT0216 | 5040205 | SEMI VARIABLE 22KOHM |
| RT0401 | 0104172 | CHIP RESISTOR 12KOHM+-10% 1/8W |
| RT0402 | 0104172 | CHIP RESISTOR 12KOHM+-10% 1/8W |
| D0001 | 5382221 | LED PLT-462T3 |
| D0205 | 5337422 | DIODE DA221 |
| D0551 | 5337391 | DIODE D1FS4 |
| D0552 | 5337371 | DIODE SB07-03C |
| D0556 | 5337353 | DIODE MA132K |
| D0557 | 5337371 | DIODE SB07-03C |
| D0601 | 5337422 | DIODE DA221 |
| D0902 | 5337351 | DIODE MA132WK |
| D0903 | 5337411 | DIODE HSM2838C |
| D0912 | 5337351 | DIODE MA132WK |
| D0913 | 5337352 | DIODE MA132WA |
| D0914 | 5337351 | DIODE MA132WK |
| D0915 | 5337001 | DIODE 1SR143 |
| D0916 | 5337352 | DIODE MA132WA |
| D0920 | 5337412 | DIODE HSM2836C |
| D0921 | 5337422 | DIODE DA221 |
| D1101 | 5337641 | DIODE HSM107S |
| D1103 | 5337353 | DIODE MA132K |
| D1104 | 5337451 | DIODE RB715F |
| D1106 | 5337353 | DIODE MA132K |
| D1107 | 5337353 | DIODE MA132K |
| D1108 | 5337351 | DIODE MA132WK |
| D1109 | 5337351 | DIODE MA132WK |
| D1305 | 5337422 | DIODE DA221 |
| IC0101 | 1366631 | IC HA118189MP |
| IC0201 | 1366901 | IC HA118372 |
| IC0202 | 1366641 | IC CXL5502N |
| IC0203 | 1352331 | IC CXL5507M |
| IC0204 | 1351492 | IC MM1029AF |
| IC0207 | 1352032 | IC NJM2249M |
| IC0401 | 1366371 | IC HA118196F |
| IC0402 | 1366601 | IC LA7471M |
| IC0551 | 1366251 | IC TL1464IPT |
| IC0601 | 1359861 | IC XR1080CV |
| IC0602 | 1366391 | IC LB1885MA |
| IC0603 | 1366651 | IC BA6417F |
| IC0901 | 1366811 | IC CXP80724-167Q |
| IC0902 | 1352582 | IC S-84206F |
| IC0903 | 1366081 | IC HD74HCT125T |
| IC0904 | 1366611 | IC XLU5949FS |
| IC0905 | 1352384 | IC NJM2903V |
| IC1101 | 1366681 | IC HA118184F |
| IC1102 | 1354723 | IC HD49318F |
| IC1103 | 1366691 | IC HG51B015TF |
| IC1104 | 1354694 | IC HG51A017FB |
| IC1105 | 1396031 | IC HD6433378V05F |
| IC1106 | 1366951 | IC S-29396IF10G-TF |
| IC1107 | 5300161 | IC NJM3404AM |
| IC1108 | 1359931 | IC TC4W66F |
| IC1109 | 1365191 | IC NJM3414M |
| IC1110 | 1366731 | IC UPD16508GB-2A5 |
| IC1301 | 1366851 | IC SC78014GC550 |
| IC1302 | 1366831 | IC SC402152FB |
| IC1303 | 1366801 | IC XPC17A85V |
| IC1304 | 1366171 | IC MB88352PFV |
| IC1305 | 1352091 | IC MM1036 |
| IC1306 | 1366071 | IC LM324DB |
| IC1307 | 1366061 | IC SN74HCT04ADB |
| IC1308 | 1366081 | IC HD74HCT125T |
| Q0001 | 1322341 | TRANSISTOR PT4810F |
| Q0002 | 5327521 | PHOTO TRANSISTOR SPI-315-C |
| Q0003 | 5327521 | PHOTO TRANSISTOR SPI-315-C |
| Q0004 | 1322341 | TRANSISTOR PT4810F |
| Q0101 | 1323541 | TRANSISTOR FMC5 |
| Q0102 | 1323231 | TRANSISTOR 2SB1462 |
| Q0103 | 1323181 | TRANSISTOR XP4213 |
| Q0106 | 1323541 | TRANSISTOR FMC5 |
| Q0107 | 1323231 | TRANSISTOR 2SB1462 |
| Q0108 | 1323321 | TRANSISTOR 2SD2216 |
| Q0109 | 5326521 | TRANSISTOR 2SA1576 |
| Q0110 | 1323171 | TRANSISTOR UN9213 |
| Q0113 | 1323321 | TRANSISTOR 2SD2216 |
| Q0115 | 1323321 | TRANSISTOR 2SD2216 |
| Q0116 | 1323321 | TRANSISTOR 2SD2216 |
| Q0117 | 1323321 | TRANSISTOR 2SD2216 |
| Q0123 | 1323231 | TRANSISTOR 2SB1462 |
| Q0124 | 1323231 | TRANSISTOR 2SB1462 |
| Q0125 | 1323321 | TRANSISTOR 2SD2216 |
| Q0127 | 1323321 | TRANSISTOR 2SD2216 |
| Q0129 | 1323321 | TRANSISTOR 2SD2216 |
| Q0131 | 1323321 | TRANSISTOR 2SD2216 |
| Q0135 | 1323541 | TRANSISTOR FMC5 |
| Q0136 | 1323171 | TRANSISTOR UN9213 |
| Q0141 | 1323231 | TRANSISTOR 2SB1462 |
| Q0142 | 1323231 | TRANSISTOR 2SB1462 |
| Q0202 | 1323321 | TRANSISTOR 2SD2216 |
| Q0203 | 1323173 | TRANSISTOR UN9212 |



| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| Q0208 | 1323171 | TRANSISTOR UN9213 |
| Q0209 | 1323321 | TRANSISTOR 2SD2216 |
| Q0212 | 1323172 | TRANSISTOR UN9113 |
| Q0213 | 1323301 | TRANSISTOR 2SB1219 |
| Q0214 | 1323171 | TRANSISTOR UN9213 |
| Q0215 | 1323231 | TRANSISTOR 2SB1462 |
| Q0216 | 1323231 | TRANSISTOR 2SB1462 |
| Q0217 | 1323231 | TRANSISTOR 2SB1462 |
| Q0218 | 1323321 | TRANSISTOR 2SD2216 |
| Q0219 | 1323231 | TRANSISTOR 2SB1462 |
| Q0220 | 1323171 | TRANSISTOR UN9213 |
| Q0237 | 1323171 | TRANSISTOR UN9213 |
| Q0240 | 1323231 | TRANSISTOR 2SB1462 |
| Q0241 | 1323171 | TRANSISTOR UN9213 |
| Q0250 | 1323231 | TRANSISTOR 2SB1462 |
| Q0254 | 1323321 | TRANSISTOR 2SD2216 |
| Q0261 | 1323361 | TRANSISTOR XP1501 |
| Q0268 | 5326681 | TRANSISTOR XN1C301 |
| Q0401 | 1323321 | TRANSISTOR 2SD2216 |
| Q0405 | 1323321 | TRANSISTOR 2SD2216 |
| Q0407 | 1323231 | TRANSISTOR 2SB1462 |
| Q0551 | 5326811 | TRANSISTOR 2SB1001 |
| Q0552 | 1308011 | TRANSISTOR MPL1 |
| Q0553 | 1308011 | TRANSISTOR MPL1 |
| Q0554 | 1308011 | TRANSISTOR MPL1 |
| Q0555 | 1323781 | TRANSISTOR 2SK1764 |
| Q0602 | 1323321 | TRANSISTOR 2SD2216 |
| Q0603 | 1323171 | TRANSISTOR UN9213 |
| Q0605 | 1323171 | TRANSISTOR UN9213 |
| Q0608 | 1323321 | TRANSISTOR 2SD2216 |
| Q0901 | 1323231 | TRANSISTOR 2SB1462 |
| Q0902 | 1323081 | TRANSISTOR 2SA1036K |
| Q0903 | 1323321 | TRANSISTOR 2SD2216 |
| Q0904 | 1323321 | TRANSISTOR 2SD2216 |
| Q0905 | 1323231 | TRANSISTOR 2SB1462 |
| Q0906 | 1323321 | TRANSISTOR 2SD2216 |
| Q0907 | 1323321 | TRANSISTOR 2SD2216 |
| Q0908 | 1323321 | TRANSISTOR 2SD2216 |
| Q0915 | 1323321 | TRANSISTOR 2SD2216 |
| Q0916 | 5326502 | TRANSISTOR 2SD1766 (R) |
| Q0917 | 1323321 | TRANSISTOR 2SD2216 |
| Q0918 | 1323252 | TRANSISTOR XP4501 |
| Q1100 | 1323171 | TRANSISTOR UN9213 |
| Q1101 | 1323231 | TRANSISTOR 2SB1462 |
| Q1102 | 1323231 | TRANSISTOR 2SB1462 |
| Q1103 | 1323172 | TRANSISTOR UN9113 |
| Q1104 | 1323171 | TRANSISTOR UN9213 |
| Q1105 | 5328192 | TRANSISTOR 2SC2462LD |
| Q1106 | 1323253 | TRANSISTOR XP4401 |
| Q1107 | 1323321 | TRANSISTOR 2SD2216 |
| Q1109 | 1323231 | TRANSISTOR 2SB1462 |
| Q1110 | 1323171 | TRANSISTOR UN9213 |
| Q1112 | 5328211 | TRANSISTOR 2SA1121C(SC) |
| Q1113 | 1323171 | TRANSISTOR UN9213 |
| Q1114 | 5328211 | TRANSISTOR 2SA1121C(SC)(E55A) |
| Q1115 | 1323171 | TRANSISTOR UN9213(E55A) |
| Q1301 | 5328794 | TRANSISTOR DTA143EK |
| ZD0901 | 5339213 | DIODE RD2.7MB2 |
| ⚠T0551 | 5148331 | TRANSFORMER |
| L0101 | 0773094 | CHOKE COIL 100UH+-10% |
| L0104 | 0773124 | CHOKE COIL 27UH+-5% |
| L0105 | 0773094 | CHOKE COIL 100UH+-10% |
| L0107 | 0773111 | CHOKE COIL 2.7 UH |
| L0108 | 0773136 | CHOKE COIL 220UH+-5% |
| L0109 | 0773134 | CHOKE COIL 150UH+-5% |
| L0110 | 0773118 | CHOKE COIL 10UH+-5% |
| L0111 | 0773134 | CHOKE COIL 150UH+-5% |
| L0113 | 5159177 | COIL 470UH |
| L0114 | 0773134 | CHOKE COIL 150UH+-5% |
| L0115 | 0773136 | CHOKE COIL 220UH+-5% |
| L0116 | 0773135 | CHOKE COIL 180UH+-5% |
| L0117 | 0773111 | CHOKE COIL 2.7 UH |
| L0120 | 0773118 | CHOKE COIL 10UH+-5% |
| L0124 | 0773094 | CHOKE COIL 100UH+-10% |
| L0125 | 0773094 | CHOKE COIL 100UH+-10% |
| L0201 | 0773092 | CHOKE COIL 47UH+-10% |
| L0204 | 0773118 | CHOKE COIL 10UH+-5% |
| L0205 | 0773135 | CHOKE COIL 180UH+-5% |
| L0206 | 0773089 | CHOKE COIL 22UH |
| L0207 | 0773131 | CHOKE COIL 82UH+-5% |
| L0208 | 0773133 | CHOKE COIL 120UH+-5% |
| L0209 | 0773089 | CHOKE COIL 22UH |
| L0210 | 0773129 | CHOKE COIL 68UH+-5% |
| L0211 | 0773089 | CHOKE COIL 22UH |
| L0215 | 0773092 | CHOKE COIL 47UH+-10% |
| L0401 | 0773092 | CHOKE COIL 47UH+-10% |
| L0402 | 0773094 | CHOKE COIL 100UH+-10% |
| L0551 | 5129321 | CHOKE COIL 10UH |
| L0552 | 5129321 | CHOKE COIL 10UH |
| L0553 | 5129322 | CHOKE COIL 22UH |
| L0554 | 5129321 | CHOKE COIL 10UH |
| L0555 | 0773087 | CHOKE COIL 10UH+-10% |
| L0556 | 5129321 | CHOKE COIL 10UH |
| L0557 | 5129323 | CHOKE COIL 47UH |
| L0560 | 5129323 | CHOKE COIL 47UH |
| L0563 | 5129323 | CHOKE COIL 47UH |
| L0564 | 0773087 | CHOKE COIL 10UH+-10% |
| L0565 | 0773094 | CHOKE COIL 100UH+-10% |
| L0566 | 0773094 | CHOKE COIL 100UH+-10% |
| L0567 | 0773087 | CHOKE COIL 10UH+-10% |
| L0568 | 0773087 | CHOKE COIL 10UH+-10% |
| L0602 | 0773087 | CHOKE COIL 10UH+-10% |
| L0901 | 0773081 | CHOKE COIL 1UH |
| L0902 | 0773092 | CHOKE COIL 47UH+-10% |
| L0903 | 0773094 | CHOKE COIL 100UH+-10% |
| L0904 | 0773088 | CHOKE COIL 15UH |
| L0907 | 0773121 | CHOKE COIL 15UH+-5% |
| L0909 | 0773087 | CHOKE COIL 10UH+-10% |
| L0910 | 0773094 | CHOKE COIL 100UH+-10% |
| L1102 | 0773087 | CHOKE COIL 10UH+-10% |
| L1103 | 0773087 | CHOKE COIL 10UH+-10% |
| L1105 | 0773087 | CHOKE COIL 10UH+-10% |
| L1106 | 0773087 | CHOKE COIL 10UH+-10% |
| L1107 | 0773087 | CHOKE COIL 10UH+-10% |
| L1108 | 0773087 | CHOKE COIL 10UH+-10% |
| L1109 | 0773094 | CHOKE COIL 100UH+-10% |
| L1301 | 0773087 | CHOKE COIL 10UH+-10% |
| L1302 | 0773087 | CHOKE COIL 10UH+-10% |
| L1303 | 0773089 | CHOKE COIL 22UH |
| L10901 | 5761771 | BATTERY, BACK UP |
| X0201 | 1930051 | CRYSTAL |
| X0601 | 1930171 | CRYSTAL |
| X0901 | 1930171 | CRYSTAL |
| X0902 | 1930031 | CRYSTAL |
| X1101 | 1930161 | CRYSTAL |
| BL0394 | 5172541 | FILTER |
| BL0395 | 5172541 | FILTER |
| BL0396 | 5172541 | FILTER |
| BL0397 | 5172541 | FILTER |
| BL0398 | 0103882 | FILTER |

| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| BL0399 | 5172541 | FILTER |
| CN0005 | 1880142 | CONNECTOR |
| CN0901 | 5845856 | CONNECTOR |
| CN0902 | 5847082 | CONNECTOR |
| CP0202 | 5172813 | FILTER |
| CP0203 | 5172814 | FILTER |
| CP0204 | 5172624 | FILTER, BAND PASS |
| CP0402 | 5172424 | FILTER |
| CP1102 | 5172802 | FILTER, LOW PASS |
| △F0551 | 5723232 | FUSE, 2A |
| △F0552 | 5723233 | FUSE, 0.8A |
| JK0200 | 5695291 | SOCKT |
| PG0001 | 5666921 | MINI PLUG |
| PG0101 | 5668975 | PLUG |
| PG0400 | 5668671 | MINI PLUG |
| PG0402 | 5669151 | MINI PLUG |
| PG0551 | 1830321 | PLUG |
| PG0601 | 5692362 | MINI PLUG |
| PG0602 | 5666929 | PLUG |
| PG0603 | 5668753 | MINI PLUG |
| PG0604 | 5668671 | MINI PLUG |
| PG0901 | 5662766 | PLUG |
| PG0902 | 5669191 | PLUG |
| PG0903 | 5669193 | MINI PLUG |
| PG0904 | 5668671 | MINI PLUG |
| PG0905 | 5669033 | PLUG |
| PG0906 | 1830351 | PLUG |
| PG0907 | 5669033 | PLUG |
| PG1101 | 1830341 | PLUG |
| PG1102 | 5669102 | PLUG |
| PG1301 | 5669104 | PLUG |
| S0003 | 5636171 | SWITCH |
| S0004 | 5636171 | SWITCH |
| S0005 | 5636171 | SWITCH |
| S0006 | 5635331 | SWITCH |
| S0007 | 5613521 | MECHANISM STATE SWITCH |
| S0901 | 1741063 | SWITCH |
| S0902 | 1742021 | SWITCH |
| S0903 | 1742011 | SWITCH |
| S0904 | 1742011 | SWITCH |
| S0905 | 1742011 | SWITCH |
| S0906 | 1742011 | SWITCH |
| S0907 | 1742011 | SWITCH |
| S0909 | 1742011 | SWITCH |
| SW0908 | 5635612 | SWITCH |

| CAMERA SECTION | | |
|---|---|---|
| C1004 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1006 | 0893239 | CERAMIC CHIP 0.01UF+80-20% 50V |
| C1007 | 0893114 | CERAMIC CHIP 12PF+-5% 50V |
| R1001 | 0790048 | CHIP RESISTOR 6.8KOHM+-5% 1/16W |
| R1002 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| R1003 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R1004 | 0790067 | CHIP RESISTOR 180KOHM+-5% 1/16W |
| R1005 | 0790056 | CHIP RESISTOR 27KOHM+-5% 1/16W |
| R1006 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R1007 | 0790077 | CHIP RESISTOR 1MOHM+-5% 1/16W |
| R1008 | 0790035 | CHIP RESISTOR 680 OHM+-5% 1/16W |
| R1010 | 0790024 | CHIP RESISTOR 100 OHM+-5% 1/16W |
| D1001 | 5382911 | DIDOE LT1D82A |
| IC1001 | 5318461 | CCD IMAGE DEVICE ICX054AK-6 |
| IC1002 | 5317391 | LED MODULE |
| IC1401 | 1390834 | PWB ASSY HTS9557C |
| IC1402 | 1390844 | PWB ASSY HTS9558C |

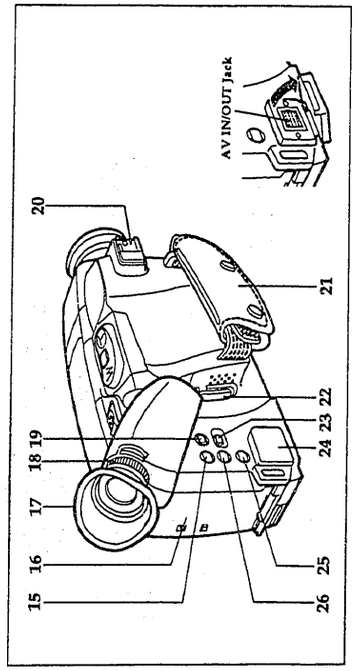
| SYMBOL-NO | P-NO | DESCRIPTION |
|---|---|---|
| Q1G01 | 5328221 | TRANSISTOR 2SC2620-QC |
| PG1001 | 1830342 | PLUG |
| | | ELECTRONIC VIEWFINDER SECTION |
| C2004 | 02684373 | POLYPROPYLENE 4700PF+-5%50V |
| C2006 | 0249655 | CERAMIC CHIP 1000PF+-10% 1000V |
| C2007 | 0249656 | CERAMIC CHIP 1000PF+-10% 500V |
| C2009 | 0893086 | CERAMIC CHIP 0.1UF+80-20% 50V |
| C2011 | 0209852 | CERAMIC CHIP 180PF+-5% 50V |
| C2012 | 0893086 | CERAMIC CHIP 0.1UF+80-20% 50V |
| C2013 | 0893086 | CERAMIC CHIP 0.1UF+80-20% 50V |
| C2014 | 0268521 | MYLAR 0.1UF+-10% 50V |
| C2015 | 0202151 | CERAMIC CHIP 2200PF+-5% 50V |
| C2016 | 0893044 | CERAMIC CHIP 0.01UF+-10% 50V |
| C2018 | 0893062 | CERAMIC CHIP 1UF+80-20% 16V |
| R2001 | 0103852 | CHIP RESISTOR 5.6KOHM+-5% 0.1W |
| R2002 | 0103869 | CHIP RESISTOR 150KOHM+-5% 0.1W |
| R2003 | 0103876 | CHIP RESISTOR 560KOHM+-5% 0.1W |
| R2004 | 01038793 | CHIP RESISTOR 1MOHM+-5% 0.1W |
| R2005 | 0103879 | CHIP RESISTOR 1MOHM+-5% 0.1W |
| R2006 | 0103819 | CHIP RESISTOR 10 OHM+-5% 0.1W |
| R2007 | 0103879 | CHIP RESISTOR 1MOHM+-5% 0.1W |
| R2008 | 0103879 | CHIP RESISTOR 1MOHM+-5% 0.1W |
| R2009 | 0103847 | CHIP RESISTOR 2.2KOHM+-5% 0.1W |
| R2011 | 0103845 | CHIP RESISTOR 1.5KOHM+-5% 0.1W |
| R2012 | 0103857 | CHIP RESISTOR 15KOHM+-5% 0.1W |
| R2013 | 0103845 | CHIP RESISTOR 1.5KOHM+-5% 0.1W |
| R2014 | 0103846 | CHIP RESISTOR 1.8KOHM+-5% 0.1W |
| R2015 | 0103862 | CHIP RESISTOR 39KOHM+-5% 0.1W |
| R2016 | 0103814 | CHIP RESISTOR 3.9 OHM+-10% 0.1W |
| R2017 | 0103846 | CHIP RESISTOR 1.8KOHM+-5% 0.1W |
| R2018 | 0103863 | CHIP RESISTOR 47KOHM+-5% 0.1W |
| R2019 | 0103848 | CHIP RESISTOR 2.7KOHM+-5% 0.1W |
| R2020 | 0103867 | CHIP RESISTOR 100KOHM+-5% 0.1W |
| R2021 | 0103855 | CHIP RESISTOR 10KOHM+-5% 0.1W |
| R2022 | 0103831 | CHIP RESISTOR 100 OHM+-5% 0.1W |
| R2024 | 0103879 | CHIP RESISTOR 1MOHM+-5% 0.1W |
| R2025 | 01038743 | CHIP RESISTOR 390KOHM+-5% 0.1W |
| R2026 | 0103843 | CHIP RESISTOR 1KOHM+-5% 0.1W |
| R2027 | 0103843 | CHIP RESISTOR 1KOHM+-5% 0.1W |
| RT2001 | 5035204 | SEMI VARIABLE 2.2MOHM |
| RT2002 | 5030251 | SEMI VARIABLE 1MOHM |
| RT2003 | 5040103 | SEMI VARIABLE 470 OHM |
| D2001 | 5337133 | DIODE MA141K |
| D2002 | 5337321 | DIODE MA199 |
| IC2001 | 1365881 | IC HA118179F |
| Q2001 | 5323831 | TRANSISTOR 2SD974 |
| Q2002 | 5326682 | TRANSISTOR XN1B301 |
| △T2001 | 5240566 | TRANSFORMER |
| L2001 | 0773003 | COIL 47UH |
| L2002 | 5244017 | COIL |
| CN2001 | 5844998 | CONNECTOR |
| △CS2001 | 5887003 | SOCKET, CRT |
| PG2001 | 5669631 | CONNECTOR |





# APPENDIX

## 1. IDENTIFICATION AND OPERATION OF CONTROLS




**14. Microphone**

**15. PLAY Button**
Use to playback recorded tapes.

**16. Power Supply Attachment**
The battery, battery case and external power adapter connect here ("Loading Batteries," p. 12, "Using Alternative Power Sources," p. 13)

**17. Eye Cup**
Pull this cup all the way to see the image in the viewfinder. Return in to its original position when carrying the camera/recorder or storing it.

**18. Diopter Control**
Use this control to focus the viewfinder.

**19. F.FWD Button**
Use this button to fast forward tapes or for visual search. During visual search the camera/recorder fast forwards at approximately 9 times normal playback speed. Also use this button to set date and time.

**20. Camera Light Shoe**
Attach the DC camera light here.

**21. Hand Strap**
Refer to page 22.

**22. Start/Stop Button**
When the CAMERA/OFF/VIDEO switch is on CAMERA press this button to start recording. When pressed a second time the camera pauses. During playback use this button to stop the tape temporarily. Pressing a second time resumes normal playback.

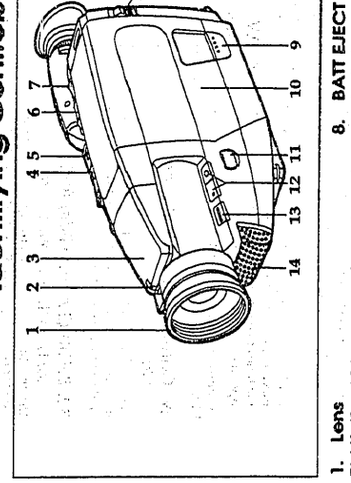
**23. REW/REVIEW Button**
Use this button to fast rewind tapes or for visual search. During visual search the camera/recorder rewinds at approximately 7 times normal playback speed. Also use this button to set date and time. Furthermore, use this button to review the last few seconds of the tape you are recording.

**24. AV IN/OUT Jack (Behind the door)**
Use this jack to connect the camera/recorder to a VCR or television ("Playing Back Your Recordings," p. 24, "Dubbing from the Camera/Recorder to a VCR," p. 38 and "Recording Television Programs", p. 43).

**25. DATE Button**
Use this button to record the date and time on your tape. Any time that the date and time display is in the viewfinder they are recorded on your tape.

**26. STOP Button**
Use this button to stop playback, fast forward, or reverse. Also use this button to set date and time.

## Identifying Controls




**1. Lens**
F1.4 (6–48mm) 8:1 power zoom lens with auto focus and auto iris functions.

**2. Record Indicator**
This indicator lights when the camera/recorder is recording.

**3. Infrared Receiver**
The area where infared signals from the wireless remote are received. Aim the remote control to this area for best results.

**4. INST. ZOOM (Instant Zoom) Button**
Use this button to magnify the image being recorded 1.5 times momentarily.

**5. Power Zoom Switch**
Use this to zoom automatically ("Using the Power Zoom," p. 30).

**6. CAMERA/OFF/VIDEO Power Switch**
Hold down the red button as you slide the switch to CAMERA or VIDEO. You do not need to hold down the red button to slide the switch to OFF.

**7. EJECT Switch**
A power soure must be connected before cassettes can be inserted or removed though the CAMERA/OFF/VIDEO switch may be set to OFF ("Inserting and Removing Cassettes," p. 15)

**8. BATT EJECT (Battery Eject) Switch**
Slide this switch to remove the battery, battery case or external power adapter.

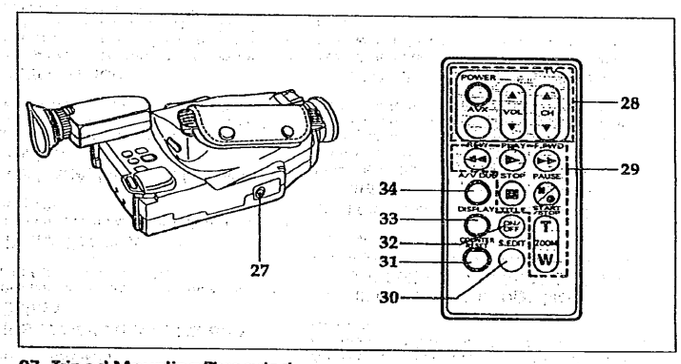
**9. Cassette holder close button**
CAUTION: Be sure to press this button to close the cassette holder. Otherwise, the tape may become slack and may be damaged.

**10. Cassette Holder**
A power source must be connected to the camera/recorder before a cassette can be inserted or removed.

**11. EIS (Electronic Image Stabilizer) Button (Only for VM-E55A)**
EIS corrects slight shaking of an image ("Using the Electronic Image Stabilizer," p. 32).

**12. FOCUS Control (AUTO/MAN) Buttons (Only for VM-E55A)**
Press these buttons simultaneously to select manual or automatic focus. For manual focusing ("Using Manual Focus", p. 32), press the ▶ or ◀ button to bring the subject into focus. When using manual focus, Focus appears in the viewfinder.

**13. FADE Button (Only for VM-E55A)**
The FADE button features three modes; white fade, wipe fade, and zoom fade ("Using Fade," p. 33).




### 27. Tripod Mounting Threaded Socket

Use this threaded socket to mount the camera/recorder to a tripod.

### 28. TV Control Buttons

Used for controlling the TV.

- POWER : Turns the TV on and off.
- AVX : Used for recording picture and sound from an auxiliary input (only wity Hitachi TVs)
- VOLUME: Increase (▲) or decrease (▼) the volume.
- CHANNEL : Top (▲) button switches to the next higher channel, bottom (▼) button switches to the next lower channel. For these to operate, you must have preset your channels.

("Controlling your TV with the Camera/Recorder" P40)

### 29. Camera/Recorder Remote Control

The shaded buttons on the remote control have the same functions as the corresponding buttons on the camera/recorder.

### 30. S.EDIT (Synchro Edit) Button (only on the remote control)

Use this button to activate the synchro edit function for dubbing. ("Using Synchro Edit", P39)

### 31. COUNTER RESET Button (only on the remote control)

Use this button to reset the linear time counter to 0:00:00.

### 32. TITLE ON/OFF Button (only on the remote control)

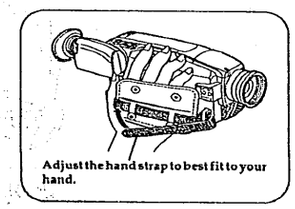
Use this button to create and record titles for your tapes ("Creating and Recording Titles," p 35)

### 33. DISPLAY Button (only on the remote control)

Use this button to select the viewfinder and TV display ("Using the Display Button," p 19).

### 34. AV DUB Button (only on the remote control)

Use this button to record new audio and video over existing audio and video.

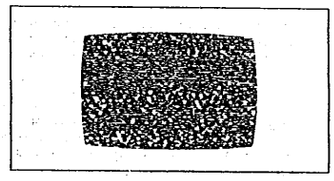



# General Maintenence

## Cleaning the Camera/Recorder Heads

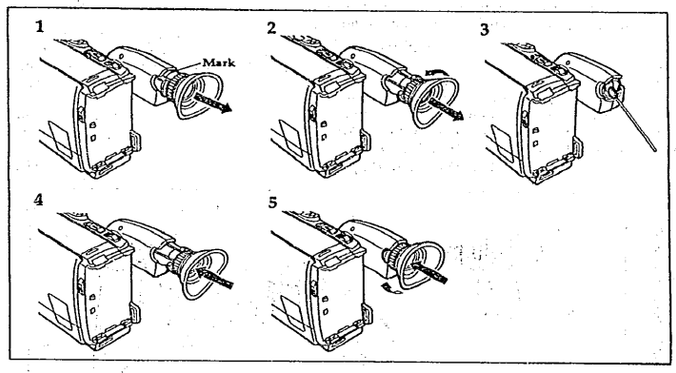
Dirt can accumulate on the video heads on the camera causing the playback picture to become blurred or appear as if video information is lost. This often means that the video heads are dirty. Use a video head cleaner such as Maxell 8M-CLT to clean the heads.

If after cleaning the heads the picture does not clear up consult your nearest dealer or VCR service center for professional head cleaning.



## Cleaning the Lens and Picture Tube of the Electronic Viewfinder

The lens of the electronic viewfinder can be user-cleaned if dust, dirt, or other foreign matter adheres to it.




1. Pull out the eye cup to the position where a mark can be seen (up to a half where it is pulled out all the way). The side with the mark should be up.
2. Turn the eye cup counterclockwise until it stops, then pull it out to remove.
3. Clean the picture tube face and lens. To prevent scratching, use a soft non abrasive cloth, swab or lens cleaning paper.
4. Face the rib up as shown above and push the eye cup in until it stops.
5. Turn the eye cup clockwise until it stops, then push it in all the way.

# Periodic Maintenance

A precision electromechanical device, the Hitachi VM-E53A/E55A requires maintenance after a period of normal use. We expect that no other maintenance other than head cleaning will be required during the period of warranty unless the camera/recorder is used either heavily or seldom. Defective parts are covered by the warranty. Normal maintenance is the responsibility of the owner. Consult your dealer or local VCR service center for recommendations regarding normal maintenance based on your use patterns, location, and the age of the camera/recorder.

# Troubleshooting

*Quality is very important at Hitachi. We inspect and check every camera/recorder carefully at the factory under the most rigid quality control and inspection systems. If problems develop please check the following possible solutions before inquiring about professional service.*

**INSERTING OR REMOVING THE CASSETTE**

| Symptom | Check Point & Correction |
|---|---|
| Cassette holder cannot be opened when you push EJECT switch | • Connect the power source. |
| Cassette cannot be inserted into cassette compartment. | • Load cassette in direction indicated by arrow on cassette. |
| | • Cassette window must be toward outside. |

**CAMERA RECORDING**

| Symptom | Check Point & Correction |
|---|---|
| Picture does not appear in the viewfinder. | • Remove the lens cap. |
| | • Slide the CAMARA/OFF/VIDEO switch to CAMERA. |
| | • Disconnect the AV input cord from the camera/recorder. |
| The camera/recorder cannot go into the recording mode, even when the start/stop button is pressed. | • Check the record-protect tab on the cassette. See page 16 for details. |
| | • Push the cassette holder embossed PUSH to close it. |
| | • Slide the CAMERA/OFF/VIDEO switch to CAMERA. |
| Picture is out of focus.<br>Auto-focus does not operate. | • Make sure that Focus does not appear in the viewfinder. If it is displayed, press FOCUS Control (AUTO/MAN) buttons to erase it. -VM-E55A only |
| | • Auto-Focus does not operate if a special-effects filter is attached or the objects shown on page 31 are being recorded. |

**RECORDING TV PROGRAMS OFF THE AIR**

| Symptom | Check Point & Correction |
|---|---|
| The camera/recorder cannot be set to the recording mode, even when the Start/Stop button on the camera/recorder is pressed. | • Check the record-protect tab on the cassette. See page 16 for details. |
| | • Set the CAMERA/OFF/VIDEO switch to CAMERA. |
| | • Connect the camera/recorder and TV or VCR. |

**PLAYBACK OF PRE-RECORDED CASSETTE**

| Symptom | Check Point & Correction |
|---|---|
| "PLAY" button cannot be engaged. | • Set the CAMERA/OFF/VIDEO switch to "VIDEO" position. |
| No picture appears on television screen when "PLAY" button is pressed.<br>(TV is connected to the camera/recorder by using RF output adapter.) | • Set the television to the camera/recorder channel (3or4) depending upon the selected channel in the RF channel select switch of RF output adapter. |
| Interference on playback picture.<br>(TV is connected to the camera/recorder by using RF output adapter.) | • When you see the playback picture on youy TV, adjust fine tuning knob on television set to obtain best picture. |
| Picture bends at the top of TV screen. | • TV receiver is of older type. It needs to be modified to work properly with camera/recorder. |
| | • Tape is damaged. Try another cassette. |
| Color of your TV screen is too bright, too faint or change. | • TV set has VIR circuit. Turn it off during playback. |

**DEW**

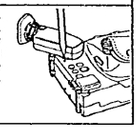
| Symptom | Check Point & Correction |
|---|---|
| "DEW" indication flashes in the viewfinder. | • Condensation on the camera/recorder machnism—wait until the unit has reached normal room temperature, and condensation has dried. "DEW" indication will then stop flashing. |

**BATTERY CONDITION**

| Symptom | Check Point & Correction |
|---|---|
| The ( ) indication in the electronic viewfinder flashes to indicate battery is discharged. | • Try another battery or charge the battery. |

**NO OPERATION IS ACCEPTED**

| Symptom | Check Point & Correction |
|---|---|
| Power is not turned on and no button operations are accepted. | • Remove the power source, and after about one minute, push the reset switch gently using a toothpick, etc. until you feel a click. The dispaly will be reset. Then set the information again. |



**EJECT OR TROUBLE DISPLAY**

| Symptom | Check Point & Correction |
|---|---|
| EJECT or TROUBLE appears in the viewfinder. | • Have you moved the camera/recorder or cassette from a cold place to a warm place so that its temperature changed abruptly? If the temperature has changed, remove the cassette and set the CAMERA/OFF/VIDEO switch to OFF, then wait for about one hour.<br>• Remove the cassette and then try to reinsert: remove it several times. If the indication is still shown in the viewfinder, use a cleaning tape to clean the heads and replace the cassette. |

HITACHI

VM-E53A(U,C),(PX)
VM-E55A(U,C)

TK No.6307E

TOKAI Consumer Electronics Division

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